

A GUIDEBOOK TO
HANDCUFFS
AND OTHER RESTRAINTS
OF THE WORLD



ALEX R NICHOLS

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Front cover picture: Guard with prisoner fitted with Göncz handcuffs, leading chain and leg-irons.

Back cover picture: Two prisoners, the man in the orange uniform fitted with Bren "Ralkem" handcuffs, security belt and leg-irons. The man in the blue uniform is fitted with Hiatt-Thompson hinged handcuffs, "Blue Box # 2", belly chain, connector chain and leg-irons.

Both have disposable anti-spitting masks.

A GUIDEBOOK TO THE
HANDCUFFS
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A HISTORY AND SURVEY OF
RESTRAINT EQUIPMENT
AND ITS USE FROM
THE EARLIEST TIMES TO THE
PRESENT

ALEX R NICHOLS BA(Hons)

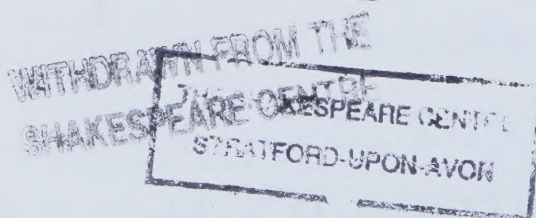
1252
This book is dedicated to my friend

Derek Bowden,

who, a long time ago, lent me the book

which started my interest in this

fascinating subject.



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PREFACE.

Considering that the use of restraint equipment is frequent and widespread, it is surprising to discover that so little has been written on the subject. So far as the author has been able to find out there is no twentieth century English language textbook on the subject available in Great Britain (other than his own introductory booklet *Handcuffs & Other Restraints*) and only a handful of books is currently available in the United States of America. This book is an attempt to fill that gap and take the subject into the twenty-first century.

The subject is such a vast one that it is not possible to claim this book as an encyclopaedia, though the author has tried to present as wide a range of restraints as possible. There is an attempt to be historical and to describe equipment from the earliest times to the present day, so there are chapters on ancient and medieval restraints as well as modern ones. In the modern section most of the best known types from the major industrial countries are described and illustrated. In addition there are chapters dealing with specialised items so that there is one on thumb and finger cuffs, one on grips and related items, one on plastic and webbing restraints, and one on belts and strap restraints. Two further chapters deal with miscellaneous restraints that are not easily classified by period of use, type of material or country of origin, for example, rope ties or restraint garments.

The definition of the historical periods is an arbitrary one, but seems logical with this subject. Ancient will mean anything Roman or earlier, medieval will mean anything later until the industrial revolution, say about 1700. Modern will mean anything produced since then. However there is a considerable overlap, not least because there is no great difference between the types of restraint produced until the nineteenth century. From prehistoric times onwards there is a gradual development, but some designs were constant, so that ancient type restraints were made well into modern times. For example, so-called "slave irons" using the ancient "puzzle" lock were produced at least until the late nineteenth century, mainly in the Middle East. A newspaper photograph circa 1970, shows prisoners in Sudan fettered with medieval type riveted irons (Fig.1) and leg-irons of this type were made and used in South Africa at least until the end of the Apartheid era. The introductory historical chapter should help to clarify these definitions of periods.

Places named are in the United Kingdom of Great Britain and Northern Ireland unless otherwise subsequently indicated by the name of the country in brackets. The United Kingdom will usually be referred to as Britain. The name of the United States of America will be written out in full the first time it occurs in a chapter or section, thereafter it will be written as U.S.A.

The illustrations come from a variety of sources and these are usually indicated in the captions. On those rare occasions where the source is not known, this is indicated by the note "Unknown". Illustrations where the source is not indicated are the author's photographs of items in his own collection and these usually include a scale, graduated in inches and centimetres to indicate size. Regrettably, the sources of some press cuttings are unacknowledged, mainly because they were passed on to the author by other people and the sources were not noted at the time. These are indicated by the note "Unknown Press". A few pictures are derived from the E-Bay Auctions website on the Internet and these are indicated as E-Bay.

The illustrations are not generally integrated into the text because of the difficulty of correlating so many pictures with the relevant passages. They are therefore usually placed at the end of each chapter or section as appropriate.

The words manacle and fetter are much misused, so that one reads of prisoners “having heavy manacles put on their feet”. Manacles are handcuffs, from the Latin *manus*, hand; what goes on feet are fetters. In this book the words will only be used in their correct sense, unless quoting a less fastidious source, which will be clear from the context. The author has also tried to achieve that grammatical accuracy which is essential for understanding and, for example, tries to avoid the common verb tense errors such as the misuse of the words – could, would and might. The past tense is used when describing what was done and the present tense for describing existing artefacts.

Also included is a chapter entitled The Psychology of Restraint and one on Handcuffing Techniques, which are written differently to the rest of the book. The author feels that, as those chapters differ from the others by the rather subjective nature of the text, they should be written in the first person. This is meant to make clear that, whilst the intention elsewhere is to be as historically and factually accurate as possible, those chapters are merely an expression of the author’s opinion. The Acknowledgements section is also written in the first person because of the nature of the sentiments expressed therein.

In the remainder of the book unverified facts are indicated by expressions such as “it is thought that” or “many people consider”. However, the reader is warned that there is relatively little totally reliable documentary evidence before the middle of the twentieth century. For example, documents relating to restraint manufacturers and their dates are very hard to find. Indeed, it is disconcerting to discover that existing companies are often surprisingly ignorant about the dates of their own recent products. Nevertheless, those things stated as fact here are always based on at least one piece of reliable documentary or witness evidence. However, with this vast subject it seems inevitable that the author will make mistakes and he apologises for any that the reader may find. Hopefully they can be put right in any future edition of the book.



Figure 1. Prisoner in Sudan fitted with medieval type riveted fetters (Guardian).

ACKNOWLEDGEMENTS.

Many fellow collectors have helped me in the research for this book, indeed without their help it would have been a very much slimmer volume. Chris Gower has been a tower of strength, unstinting in his advice and supply of information. He made his very extensive collection available to me for photographic purposes and often lent me items to try out with my assistant. Jeffrey Hall, Richard Hopkins, John Ireland, Peter McCahon, G.H.Allen, Chris Farmer and Mike Riccard in this country have helped with information and/or pictures of items in their collections. Abroad, Michael Busch and Günter Kirsche in Germany and Jon Oliver, Yossie Silverman and Stan Willis in the United States of America have also been helpful with information and photographs. Yossie and Stan have kindly allowed me to use some of the pictures from their Internet web-sites. Ian McColl in Australia has not only given much information, but has made some interesting and unique items for the author's collection. I owe them all an immeasurable debt of gratitude.

Manufacturers of restraints have also been most helpful with information about their companies. I thank Geoff Cross at Hiatt, Eran Bauer at Civil Defence Supply, Peter Gunn at Chubb, Simon Topman at Hudson and Peter LaTrobe in this country. Overseas, Axel Pleithner at Clejus in Germany, Chantal Poupet at Rivoir in France and John Göncz of Arms Tech and Stacy Schultz of the Humane Restraint Co. in the U.S.A. also kindly supplied information. Don Davis, whose firm Freeway Training is not a manufacturer but provides a variety of restraint training aids, has also given me information about recent inventions.

I am grateful to the curators of several museums who have also given me much assistance. Foremost have been Eric Langham and Louise Connell at the Galleries of Justice in Nottingham, where most of my collection is housed. They also gave me unlimited access to the library there. Andrew Davies at the Museum of Lincolnshire Life in Lincoln, Lynette Morrissey at Lancaster Castle, Michelle Petyt at York Castle, Jenny Connelly at the Royal Armouries, Leeds, Dave Cross at the West Midlands Police Museum, Birmingham, Peter Davies at the Prison Service Museum, Newbold Revell and David Eveleigh at Blaise Castle House Museum, Bristol have all given me access to their collections and allowed me to photograph items. I thank Miroslava Menšíková of the Museum Mesta Brna, Brno, The Czech Republic, who kindly sent some photographs from that collection.

Thanks also to Blaise Vyner, editor of the *Archaeological Journal* for permission to use some of Hugh Thompson's illustrations from that publication.

I thank James Weaver for being my assistant, trying out most of the restraints in my collection and quite a few of Chris Gower's and giving an intelligent appraisal of their effectiveness. He also acted as "prisoner" in most of the photographs of items in use in the book and also on my web-site. I must also thank Matthew Colling, Julian and Mark Dodd, Haze Lock and Martyn and Nick Weaver for their help as "prisoners" in various photographs.

My sons, Simon and Robert, being computer professionals, have given me vitally important assistance in assembling this book and also my web-site. I cannot imagine how I could have coped without them and I am grateful for their help.

Lastly, but by no means least, I must thank Mike Salter for much helpful advice and Andrew Kerr, not only for that most important task, proof reading, but also much information.

1. INTRODUCTION AND OUTLINE HISTORY.

It is not possible to say when restraints were first used by human beings, but it seems highly likely that it was a very long time before recorded history. Archaeology has shown that Neanderthal people used various fibres to make rope, which was almost certainly the first thing that was used for restraints. Animal skin was cut into rawhide strips for a wide variety of purposes and its use for restraints also seems probable. Certainly technologically primitive peoples have used such materials to bind their captives right up to modern times. For example, we have the stories of people captured by Amerindians in the seventeenth and eighteenth centuries telling of how they were so bound.¹ Even technologically able people use rope when sophisticated restraints are not readily available, for example in war situations prisoners are often bound with rope (Fig.1). Some of the earliest of such things to have survived are plaited leather cords, such as that found around the neck of a man dug out from a peat bog at Tollund (Denmark),² though it is not clear if that was a restraint or murder weapon.

With the discovery of metals and the fashioning of them into tools, copper, brass and bronze at first and then iron, it was possible to make more secure restraints. We have evidence of such usage in ancient writings; the Bible for example has accounts of people being bound with chains of brass and iron. Ancient stone carvings also give us pictures of such restraints in use. In the British Museum there are Assyrian bas-reliefs from 700-500 BC which contain many scenes of bound prisoners. All over the Roman world many stone carvings have been found which show chained prisoners. However, metal artefacts are not common. In ancient times, metal was frequently re-used, so that for example, when copper restraints were no longer of use they were melted down and used for something else. Metal was too precious to waste. So it tends to be only the rare lost item that turns up. The British Museum has a bronze object which was discovered by William Kennett Loftus in Mesopotamia in 1854, which he described as a prisoner's fetter, which has been dated to about 1900 BC, making it one of the earliest pieces of restraint equipment known to us. Many iron objects have been found dating from the late Iron Age and Roman times and can be seen in various museums.

Medieval restraints are more common and can be seen in many places. Castles, because of their use as prisons, are frequently places where restraints are found. For example, in the castle at Gradara (Italy) a collar, leg-irons and chains were found in what is thought to have been the castle's torture chamber. The castle at Ghent (Belgium) has a large collection of medieval restraints and torture equipment on display, as does the Gevangenpoort prison museum at The Hague (The Netherlands). Many places have examples of restraint equipment used by the Inquisition. Well known too are the wooden stocks of many a village green in England and even the occasional pillory. A rare example of an unusual early restraint is the very fine set of finger stocks in the parish church in Ashby-de-la-Zouche and in Painswick (Gloucestershire) there is a fine set of stocks made of iron, rather like a fixed pair of leg-irons.

Wood was used to make a variety of restraints. The stocks for the feet and the pillory for the neck and hands have already been mentioned. Several other types of restraint were used. Those which are best known are of medieval origin, but this is probably because the nature of wooden articles is such that earlier ones have long since rotted away. However, some of the restraints shown on the Assyrian carvings referred to earlier appear to be rectangular contraptions and could well be wooden restraints. Medieval wooden restraints which can still be seen in various museums include such things as the "fiddle", a contraption which fits around the neck and then holds the hands out in front, one before the other (Fig.2) and the cangue, a round solid wheel-like structure which goes around the prisoner's neck and is often big enough to prevent the mouth being reached, so that an unaided prisoner could starve to death. Also

well known is the barrel which has a hole in one end large enough to fit over a prisoner's head, usually put on habitual drunkards. In Africa, slaves were often secured by wooden poles around the neck when being transported in coffles, the name used to describe the long strings of chained or bound slaves on the way to market (Fig.3).¹ In camp or in the trading post, those slaves thought to be a special escape risk were also tethered by an ankle put through a hole in a large log and fastened with a hammered peg (Fig.4). Wood was used in quite modern times. Blaise Castle House Museum in Bristol has a well used pair of wooden handcuffs which are probably of the nineteenth century (Fig.5) and items of this sort turn up occasionally in various places. It may be that these were used by people other than the police, for example, that museum has a record of handcuffs being used by gamekeepers on poachers they caught.

The production of metal restraints posed a problem of security. Rope and rawhide thongs could be knotted. Some similarly secure method of fastening metal restraints had to be found. Probably the earliest device was the hammered ring – a metal ring put through a suitably placed hole could be hammered shut and then re-opened with a hammer and chisel when needed. A variation on the method referred to earlier in connection with wooden restraints to secure slaves, was an iron wedge hammered into a suitably placed slot, which could be hammered out when unlocking was required. From that it was an easy progression to rivets and these methods were by far and away the commonest ways of securing metal restraints until the Industrial Revolution or even later.

Locks were invented quite early on, certainly the Romans knew how to make them. These could be very complex indeed, judging by the evidence of keys found at various sites which are displayed in the British Museum (Fig.6). But complex locks were not what was required for restraints and the type of lock that was generally used was the spring wedge lock. This seems to have been invented sometime in the first century BC, maybe in the far East. Such locks are sometimes called Chinese locks and are still made today, to lock small caskets such as those sold in “ethnic” artefact shops, for example.

The spring wedge lock consists of a plunger bearing two (sometimes only one) spring leaves which, when open, form a wedge. This plunger is inserted into a suitably slotted tube so that the expanded wedge cannot be withdrawn. The lock can be opened with a key that compresses the leaves, allowing them to return through the slot. Such locks could be made integral to the restraint or applied separately as a padlock. Another type of early lock is that sometimes called a puzzle lock. This is a system of locking chain by making one link larger than the rest so that the chain can be threaded back through itself. This system only works with total security when the far end of the chain can be secured by ring, rivet or lock. A very fine example was discovered at Llyn Cerrig Bach, Anglesey, which can be seen at the national Museum of Wales in Cardiff. This is a slave gang chain which secures a group of slaves by the neck. The collar at the end of the chain is presumably locked with a hammered ring. The most commonly seen form of this system is with the so-called slave irons, which use a puzzle lock for one limb and then secures all with a spring wedge lock shackle on the other limb.

Until the Industrial Revolution of the eighteenth century, all metal restraints were individually made by blacksmiths, so it is virtually impossible to find any two items that are exactly alike. That revolution brought mass production which meant that modern restraints could be manufactured on a scale that far outclassed previous technology. This, coming with the invention of the barrel lock, made possible the production of restraints for common use.

The barrel lock revolutionised restraints. It seems to have been developed from a type of screw lock which was probably invented somewhere around 1700 AD. The screw lock consisted

of a screw threaded hollow plunger in one half of the lock, which was screwed down onto a bolt fixed in the other half of the lock. This type of lock is seen most commonly in the restraints known as “plug eights” or in the reproduction “eighteenth century” restraints made by several firms for theatre, film and leisure activity use. The barrel lock simplified this mechanism by making the plunger solid and screw threaded so that it could be screwed into a hole in the other half of the lock. Later it was fitted with a spring to hold it in place, rather than the screw thread. This made possible the snap shut restraint and so the modern handcuff was born.

What became the standard D shaped barrel lock handcuffs (Fig.7) are known in Britain as “darbies”. This is a slang expression said to derive from the phrase “Father Darby’s bands”, a very severe contract between borrowers and a notorious eighteenth century moneylender.

As the Industrial Revolution started in England, it is not surprising that the earliest mass producers of restraints were British. Many firms were founded in the eighteenth century, mostly in the Birmingham area. One of these firms, Hiatt & Co. is still in existence and is the world’s oldest handcuff manufacturer. The British firms had a vast market in the Empire and the slave trade was in full swing. Handcuffs, leg-irons, collars and gang chains were made in huge quantities. These restraints were at first fitted with plug locks and screw down locks. By about 1850 the spring loaded barrel lock had become the normal pattern, but the older locks were still fitted to some models, particularly in what was considered to be a higher security type. The screw down type of lock is most usually seen as an end lock, a small shackle used to secure the end of a gang chain. “Plug eight” handcuffs were made at least until some time after World War II.

The greatest advances in handcuff design were made in the United States of America. Until the Civil War, the few manufacturers around made barrel lock types that were identical to those produced in England. A famous exception is the Lillie pattern handcuff which was made from flat bar and seems to be a “throw-back” design resembling medieval restraints. However, by the middle 1800’s there was a lot of experimentation to produce more secure restraints. The first handcuff to be patented was that invented by William H. Kimball and registered in 1860. Two years later William V. Adams patented a handcuff which was a great advance because it was adjustable to fit several sizes of wrist. Hitherto, handcuffs had usually been single size only, although available in a range of sizes, not an arrangement of much use in the field. It could not be expected that a policeman would carry a set of handcuffs of varying sizes in his pocket. Experimentation continued rapidly and many ingenious designs were patented, not all of which were commercially produced. The most popular ones were the types invented by E. D. Bean and J. J. Tower. Also well known from this period are the “bottleneck” patterns invented by R. H. Daley and, somewhat later, by G. Caveney.

A great advance in design came in 1912, when George A. Carney patented his “swinging bow” pattern in the U.S.A. In this handcuff, the shackle is designed so that the ratcheted bow swings through the lock case and rotates a full 360°. It cannot lock unless there is a limb in it. This design overcame what was a great disadvantage of almost all previous patterns, that is the ease with which a resisting prisoner could disable the handcuffs by shutting them before they could be applied to the wrists. It is also popular because it can be “flicked” onto a prisoner’s wrist. Soon came the added bonus of a double locking system which enabled the catch (pawl) which engaged the ratchets to be secured so that the ratchets could not be further tightened. Almost all modern handcuffs are of this pattern or closely related designs.

Frequently seen and commonly miscalled a handcuff is a type of restraint called a grip, generally called a “come-along” in the U.S.A. This differs fundamentally from a handcuff in that it cannot be locked and requires the captor to maintain a hold on it. A grip is a kind of strong extension

of the captor's hand. The first types were simple "wrist cracker" chains, but more complicated designs of grip have been invented, many of them never commercially produced. The commonest type is probably the scissors pattern. This is the type so frequently described in museums and literature as a handcuff. Another simple grip is the "nipper" invented by W. Gray Phillips in 1869 in the U.S.A. which is another scissors pattern. Simpler nippers which are just hooks with a hinged bar closure were popular in the U.S.A. until sometime between the World Wars. From Taiwan comes a modern "claw" grip, a simpler version of the quite complicated German designs that are sometimes seen. Grips of this type are closed over the wrist of the prisoner, either by screwing shut or with some type of spring loaded mechanism. Some grips have been made that can be converted into handcuffs if need be.

The invention of metal restraints did not stop the use of other materials and over the centuries materials like leather and canvas have been used. In the last half of the twentieth century plastics have also been utilised. Leather straps are an obvious choice for restraints, particularly in situations like hospitals, where they are sometimes used in operating theatres in order to hold a patient in a suitable position for surgery. Better known is the use in psychiatric hospitals as restraints for mentally ill patients. Such restraints range from simple straps for limbs to quite complicated systems for holding a patient securely in bed. At the simplest, straps have been used as an additional restraint, a belt with a retaining ring for handcuffs in front, buckling behind the back. Perhaps the most extreme form of non-metallic restraint is the strait jacket. This is usually made of canvas with either tie tapes or buckled straps.

Probably the best known plastic restraint is the disposable wrist tie, the "plasticuff". This consists of a nylon band, usually 1-2 cm wide, one end of which is threaded through a simple lock at the other end, serration in the band holding it fast (Fig.8). Removal is by cutting the band, so that it can only be used once, although some re-usable ones are available which will open with a standard handcuff key. Another type of plastic handcuff uses hook and loop closure material (commonly known as "Velcro" from the name of its first manufacturer). They are re-usable.

In the last decade or so of the twentieth century some complicated combination restraints have been invented. Special belts with wrist restraints which permit varying confinement from close for secure transport, to loose for purposes such as fingerprinting; restraint for the feet can also be connected. Then there are various kinds of harness, restraint boards and chairs, anti-spitting masks and large mittens to prevent prisoners handling anything. There are even special soft helmets to prevent prisoners from harming themselves or head-butting their guards.

Thumb and finger cuffs are another type of restraint. Several patterns have been invented in the last hundred and fifty years or so and are clearly derived from the earlier thumbscrews and finger stocks. They have never been much used by law enforcement personnel, though they have been marketed as conveniently small restraints suitable for use by undercover operators or plainclothes policemen. But they never really caught on, primarily because they are difficult to apply safely so as to be escape-proof. This difficulty has made them popular with magicians and escape artists, so they are frequently seen in magic and joke shops.

When the use of restraints is studied, it is obvious that there are reasons for their use other than to prevent prisoners from escaping. In many places, prisoners are routinely handcuffed on arrest, even in situations where escape is not a consideration. It is as though the handcuffing of prisoners is done to demonstrate to themselves and others, that they are indeed prisoners. Some restraints seem to have been designed with that as the major factor being considered. This seems particularly obvious with those restraints consisting of a pair of handcuffs, or a single shackle, connected to a longish leading chain (see front cover picture). Sometimes the intention.

as with the stocks in older days, is to humiliate and perhaps the most obvious example of that is the chain gang in the U.S.A. The reference to joke shops earlier points to another use of restraints, in various leisure or social activities. For example, in some modern societies there is the custom of playing some sort of prank on a bridegroom-to-be, usually on his “stag” night, that often involves handcuffing him. Rather more off-beat is the use of restraints in adult play situations, which may or may not involve sexual activity. There is a whole market devoted to the manufacture and sale of restraints designed solely for such activities and which are mostly outside the scope of this book.

The reference to play situations is a reminder that over the years and particularly since the 1930’s, toy handcuffs have been made for children to play with. Early ones are usually metal and the later ones are mostly made of plastic. Novelty items have also been made, almost exclusively from about the middle of the twentieth century. Such an item is a ball and chain made of silver plastic material, often given to wedding couples. The commonest type is the key ring, but jewellery is also made, especially tie clips, ear-rings and bracelet charms, almost invariably as miniature handcuffs.

Restraints have been a part of the experience of human beings, probably from the very first times that they learned to use tools. An enormous variety of equipment has been invented over the centuries and subsequent chapters of this book will attempt to describe and illustrate a representative range of those restraints.

- 1. Frederick Drimmer. *Captured by the Indians*.
- 2. P.V. Glob. *The Bog People*.
- 3. Hugh Thomas. *The Slave Trade*. p.380. This wooden yoke was called a *bois mayombé*.



Figure 1. Communist prisoner captured by Nationalist forces during the civil war in China.
(Unknown Press)

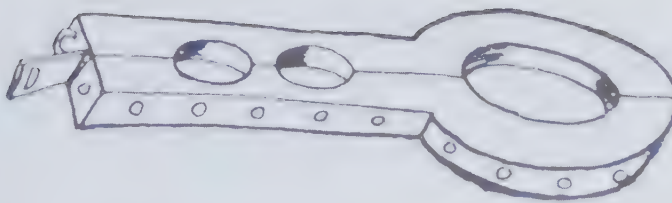


Figure 2. Wooden "fiddle" (Unknown dealer's catalogue).



Figure 3. Slave coffle (Unknown press).



Figure 4. Slaves in camp with legs secured in logs with pegs (Guardian).



Figure 5 Wooden handcuffs (Blaise Castle House Museum, Bristol)

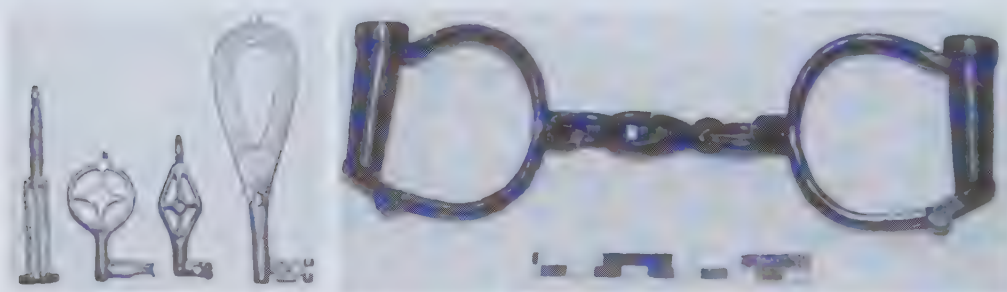


Figure 6. Roman keys in the British Museum.



Figure 7. "Darbies" handcuffs.



Figure 8. "Plasticuff" disposable plastic wrist tie (football hooligan arrested in Germany) (Guardian).

2. ANCIENT RESTRAINTS.

In the British Museum there is a bronze object (museum reference no. 56-9-3,21[91178]) which was found in a hoard of old Babylonian tools by W. K. Loftus at Tell Sifr in what is now Iraq (Fig.1). This he described as “a pair of prisoner’s fetters”. This find has been dated circa 1900 BC and could well be the oldest restraint artefact known to us.¹ The device was designed to be hammered around the ankles and presumably intended to stay on for a long time. This is a most unusual object and it does not seem likely that such things were common. Using metal for restraints in those far off days would have been an extravagance and much the most likely form of restraint used would have been some type of cord or rope. Also in the British Museum is a series of Assyrian bas reliefs dating from circa 700 BC, many of which show scenes that include bound prisoners (Fig.2). These prisoners are shown with wrists tied together in front or behind, sometimes two prisoners are shown tied together, side by side, by the wrists.

The ancient Egyptians do not seem to have made common use of metal restraints. They had access to ores for making bronze and made weapons of that material, but it was probably never plentiful enough to use regularly for making manacles or fetters. Iron was imported from the twelfth century BC onwards, but it seems likely that that also was too scarce to waste on making shackles. Most representations of prisoners show them bound with rope, in Ramses’ words “pinioned like birds”.² This is a method of binding which ties the arms at the elbows, usually behind the back but sometimes in front (see Rope Ties in the Miscellany II chapter). There are records of wooden handcuffs, secured with nails, being used on prisoners of war³.

The Bible contains numerous accounts of the use of restraints. The earliest mention is in Genesis (Chapter 22 verse 9) of Abraham binding his son Isaac, presumably with rope or cord, in preparation for sacrifice. Later, in the book of Judges (Chapter 16 verse 21) it is recorded that Samson was bound with fetters of brass. Some of these writings date from at least 500 BC, recording traditional oral history of events of long before. By the time of the New Testament, the Roman world was well developed.

In the late Iron Age and Roman world it seems that a wide range of restraints was used and a considerable number of metal artefacts have survived. There is also evidence of restraints of various kinds in many places, for example in wall paintings at Pompeii (Italy) and stone carvings on columns, arches and gravestones from all over the Roman world. Restraints were used for prisoners of war, for slaves and less commonly for civil prisoners. These restraints provide us with early examples of the common use of chain and also some of the earliest locks. Readers are referred to Hugh Thompson’s article, which is essential reading for a full understanding of late Iron Age and Roman artefacts.⁴

There seem to be two basic types of Roman restraint, those which may be described as for mobile use, such as manacles and those for static use, such as stocks. There are three basic methods of securing the restraints. Closure by rivet or hammered ring, the “puzzle lock” and the spring wedge lock.

The Babylonian bronze fetter referred to earlier was closed by being hammered shut. Closure in this way or by hammered ring, wedge or rivet are the earliest methods of making restraints secure. Indeed this was by far and away the commonest method of securing restraints right up to modern times. It is cheap and easy compared with locks, however simple, all that is needed is a pair of holes suitably placed in the shackle for a rivet or ring to go through. It is probable that the Biblical restraints referred to earlier were so secured.

The so-called “puzzle lock” (Fig.3) seems to have come into use in Europe some time during the last two centuries BC. Numerous examples have been found at Roman sites and the slave chain referred to in Chapter 1, found at Llyn Cerrig Bach is a good example (Fig.4). It must have been quite a performance to put this on, the whole chain and other collars had to be threaded through the first collar’s locking ring on the first slave and then that process repeated for the next three. The last slave probably had his collar secured with a rivet or hammered ring (Fig.5).

The Romans made quite complicated locks, judging by the evidence of keys that have been found. However the most commonly used lock for restraints was the spring wedge type. This could be in the form of a padlock, but was commonly integral to the restraint.

Never-the-less, from the evidence of the many Roman restraints so far found, by far and away the commonest method of fixing was by rivet or hammered ring. In the late Iron Age, say the last two centuries BC, well into Roman times the usual shackle consisted of two semicircular iron pieces, joined with a simple loop hinge and with holes for fastening at the ends away from the hinge (Fig.6). The hinge was often also linked to a chain. Sometimes the linkages were of a “clover leaf” pattern rather than simple rings.

Lockable Roman manacles and fetters were quite sophisticated and it is surprising to discover that they used an “eights” type handcuff (Fig.7), an example of which was found in excavations at Silchester. This is a handcuff consisting of two pieces of iron, each shaped like a figure three, joined with a simple hinge at one end and a spring wedge lock at the other, all about 7.5 inches (19cm) long.⁵ Lockable leg-irons have been found, one example discovered at Arceau (France) (Fig.8) has two semi-circular pieces, each attached at one end to a lock and the other ends of the pieces attached to prongs that fit in the lock, fastened by a spring wedge. Single lockable shackles which can be used with chain in various combinations have also been found, that found at Kunzing (Bavaria) is typical (Fig.9). Another version of the spring wedge lock, which is used as the link for several shackles, was found at Greater Chesterford (Fig.10).⁶

The Romans also used static devices, rather like stocks. The simplest consists of a flat bar of suitable length, depending upon how many prisoners it is intended to secure, to which is fixed a series of upright posts, each having a 2 inches (5cm) diameter ring at the top. These posts are about 4.4 inches (11.5cm) apart and 3.5 inches (9cm) high. After the prisoners’ ankles are placed in the device, a stout round bar is threaded through the rings and secured at one end, presumably with some sort of padlock (Fig.11). A more complicated circular version has also been found which is about 2 feet (60cm) in diameter (Fig.12). These stocks were probably fixed to the floor with large nails. The examples illustrated were found at Pompeii (Italy).

1. *Loftus hoard of old Babylonian tools from Tell Sifr*. IRAQ vol. 33, (pages 61-86). P.R.S. Moorey claims that “this identification seems very unlikely as the weight of this object, its unarticulated form and the size of the terminal loops would make its use as foot-fetters impossible”. That seems to the author to be wrong, much heavier shackles have been made right up to modern times, unarticulated foot restraints are common, the stocks for example, and the size of the terminal loops is larger than the smallest size in a modern adjustable leg-iron. It is unlikely to have been an animal hobble, the risk of injury when applying it is too great, not a factor commonly taken into account with the restraint of human beings!
2. *The Great Ages of Man, Ancient Egypt*. Time-Life Books (page 68).
3. J.Gardner Wilkinson. *The Ancient Egyptians, Vol 1*, (page 410).
4. *Iron Age and Roman Slave Shackles*. Archaeological Journal 150.
5. The author possesses a replica (see section on reproductions) and having used it on his assistant, can vouch for its efficiency, particularly if put on behind the back as Thompson suggests.
6. Cambridge Museum of Archaeology and Anthropology.

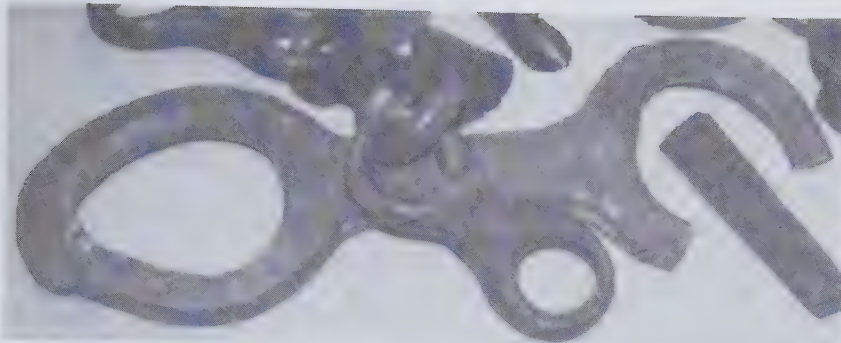


Figure 1. Assyrian prisoner's fetter from the Loftus hoard at the British Museum.



Figure 2. Assyrian Bas-relief c.550BC (British Museum).



Figure 3. "Puzzle" lock.



Figure 4. Slave chain with collars found at Llyn Cerrig Bach (Anglesey) (Archaeological Journal 150)

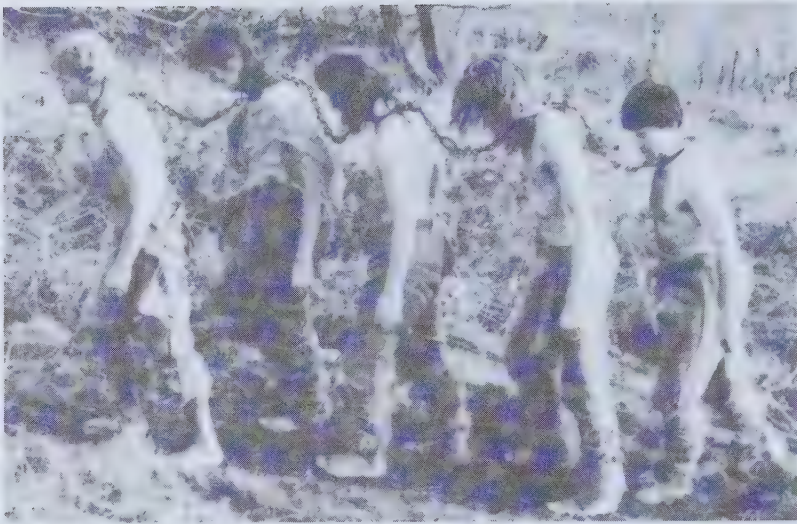


Figure 5. A group of students from Cardiff University chained with the above slave set (Archaeological Journal 150).



Figure 6. A basic Roman shackle (Archaeological Journal 150).



Figure 7. Roman "eights" pattern handcuffs (Archaeological Journal 150).

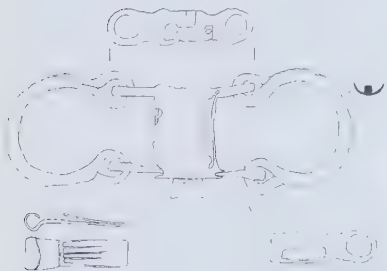


Figure 8. Roman fetters found at Arceau (France) (Archaeological Journal 150).



Figure 9. Roman shackle found at Künzing (Germany) (Archaeological Journal 150).



Figure 10. Set of Roman shackles locked together with a spring wedge lock. It is unlikely that they would have been used in this manner, this was probably done for safe storage. (Archaeological Journal 150).

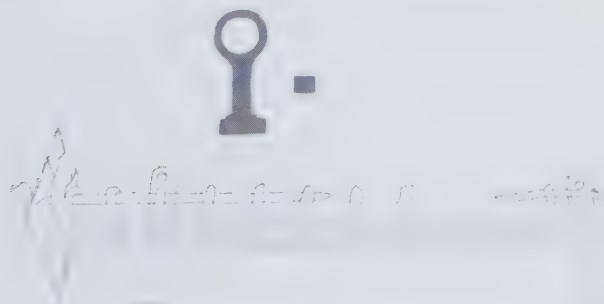


Figure 11. Drawing of a set of stocks found at Pompeii (Italy) (Archaeological Journal 150).



Figure 12. Set of round stocks found at Pompeii (Italy) (*Archaeological Journal* 150).

3. MEDIEVAL RESTRAINTS.

Generally speaking there is no fundamental difference between ancient and medieval restraints. Both kinds were individually hand made by blacksmiths and the vast majority in both cases were closed by some means of riveting or hammering shut. The Prison Service Museum at Newbold Revell has a fine example of an anvil specially made for the putting on and removal of riveted shackles (Fig.1).¹ Occasionally restraints were secured by hammering one end of the flat metal shackle around the other end. Sometimes medieval restraints were fitted with rather more sophisticated locks than are seen in ancient restraints.

The study of medieval restraints is further complicated by the fact that the types which we think of as medieval in form were still being made well into the modern period and there is no clear cut division between ancient and medieval restraints. For example, the medieval restraints at Gradara in Italy (Fig.2) referred to in the Introduction, are only rather better forged examples of the usual rivet closure irons that the Romans made.

However at least one new type of restraint seems to have made its appearance in medieval times, the "bilboes" (Fig.3). This seems to have been developed from the nautical shackle, a U shaped metal gadget, closed across the top of the U with a straight bar or bolt through appropriately placed holes (Fig.4). This was used to secure the rigging on a sailing ship. Bilboes survived well into the nineteenth century, the Museum of Lincolnshire Life in Lincoln has a fine example of what are probably a Victorian "Bobby's" handcuffs, a nicely made pair of bilboes, lockable with a padlock (or a hammered wedge) (Fig.5). It seems likely that in relatively remote country areas it took a long time for standard modern darbies to be adopted for routine use and it was cheap and easy for the local blacksmith to make a serviceable alternative. Bilboes were also popular at sea, H.M.S. Victory at Portsmouth is equipped with a set of leg-iron sized bilboes attached to the deck, used by the Master-at-arms to secure prisoners (Fig.6). They were also much used on slavers' ships.³

In the middle ages, in the late Saxon and Norman periods, metal restraints were not common. Metal was still a valuable commodity, so much so that in the twelfth century iron nails were mentioned as bequests in wills.² Prisoners were usually bound with rope, an old drawing (Fig.7) shows a prisoner, bound hand and foot to a sled, being taken to the pillory.⁴ If it was required that a prisoner be restrained for a long time, then wooden restraints were common and most places were equipped with a set of stocks. Sometimes a pillory was also provided and frequently some form of whipping post.

The stocks are well known as many survive, though most that do so show the effects and ravages of time. The set at Stow-on-the-Wold are typical (Fig.8). At Melksham in Wiltshire there is a very fine set of probably late medieval mobile stocks (Fig.9). These were designed so that they could be used to display prisoners in whichever place was appropriate for the purpose. More importantly, they could be kept under cover in the town hall when not in use, which is why they are in such good condition. Pillories have not survived so well but there used to be a good double set at Wallingford. The Galleries of Justice Museum in Nottingham has a good replica (Fig.10). Whipping posts almost always had metal pieces to restrain the wrists (Fig.11). Various combinations are also seen, usually a whipping post as part of a set of stocks (Fig.12). Occasionally there were finger stocks, a famous set is in the parish church of Ashby-de-la-Zouche (Fig.13) and another set at Littlecote Manor, Hungerford.

A very unusual restraint survives at Painswick in Gloucestershire in the form of a set of iron stocks, the "spectacle" stocks, so called because they bear a superficial resemblance to a pair of eyeglasses (Fig.14). These seem to be a kind of transitional stage between stocks and leg-irons and are dated probably not earlier than the first part of the eighteenth century, so are not really medieval, except

in form. The stocks were used well into Victorian times, a set was still being used in Hong Kong in the 1860's (Fig.15).

Related to the pillory is a group of restraints which are kinds of mobile pillory. These are made of wood or metal and an example of a wooden one, the "fiddle" is featured in chapter 1. Typical of metal ones is the restraint on display in Norwich Castle (Fig.16) which consists of a collar with wrist shackles out on either side. Another restraint of this type is the "flute" which has a collar and out in front restraints that secure the fingers, with the hands one in front of the other in the manner of a flute player (Fig.17). The most extreme form of this restraint was the cangue which was really a very large wooden collar, usually round. Two semicircular pieces of wood, joined by a hinge at one end of the straight side and lockable at the other end, with a notch in each straight side big enough so that when closed the neck is closely confined. The whole thing was usually large enough to prevent the prisoner reaching the mouth. A version of this, smaller and rectangular rather than round, was still in use by Hong Kong police in the 1860's (Fig.18).

There is a group of restraints which are variations of chair types. The simplest is a wooden stool to which a person can be attached and then ducked in a pond or river. This "ducking stool" may also be a chair, sometimes metal, but usually wooden and in both cases often with some arrangement of derrick or crane to ease the ducking process. A quite sophisticated mobile ducking machine is kept in the parish church at Leominster in Herefordshire (Fig.19). Chairs were also used in the torture chamber, either as a means of keeping a prisoner in a suitable position for the infliction of torture, or fitted with spikes to make it a torture in its own right (Fig.20).⁶

Generally medieval manacles and fetters did not differ much from their ancient predecessors. They were often forged from heavier metal bars and presented a somewhat chunkier appearance, with better fashioned hinges and rivet holes (Fig.21). Very heavy fetters were often called gyves. Various combination devices were made and a famous example is "Skeffington's daughter" dating from Henry VIII's reign, in the Tower of London (Fig.22). This is a device which fastens the neck to the hands and feet, the hands by metal loops of the kind used on whipping posts and the feet in bilboes. Also common were metal belts in various forms and combinations. In the De Gevorgenpoort museum in The Hague (The Netherlands)⁷ there is a belt, attached to a pillar, at the base of which is a set of bilboes for the feet. The hands were secured to a ring above the head (Fig.23). In the castle at Ghent (Belgium) there is a combination set of a belt, collar and manacles (Fig.24) which can be fitted to a prisoner to allow movement about, rather like a modern transport set, or it can be secured to some suitable fixed position. This is also interesting because the manacles are secured by padlocks.

Another device that seems to be of medieval origin is the basil, sometimes spelt bazil or bezel. This is a heavy ring shackle or fetter worn round one ankle and relies on its weight for its effectiveness (Fig. 25). There is a reference to such a device being used in 1592 "clap a strong paire of bolts on his heeles and a basil of twenty eight pound weight".⁸ This type of restraint continued in use well into the modern period, there is evidence of its use in Gibraltar in 1854.⁹ Similar devices made of metal survived into the twentieth century, in restraints such as the "Oregon boot" for example, and a related canvas and leather gadget is still made in the United States of America (See Modern and Belts & Strap Restraints chapters).

Related to the basil is the "ball and chain" restraint, which may have been invented towards the end of the medieval period. This consists of a heavy ball, attached by a length of chain, usually about four feet (1.2 m) long (rarely shorter as it has to be possible for the prisoner to pick up the ball and carry it when walking) to a single or double leg shackles. It is almost certainly a cannon ball that was used, as it would have been an unnecessary expense to produce such an item solely

for use in restraints. It is probable that the most common period of use was during the early modern period, that is, in the eighteenth and nineteenth centuries. Certainly this restraint was offered for sale in a dealer's catalogue in the late 1800's.¹⁰ This type of restraint frequently turns up in modern reproduction or fake form, originals are rare other than in museums.

In the middle ages, the locking system for shackles was developed by the addition of a collar that slid onto its closed jaw (Fig.26) which kept the shackle tightly closed and then a rivet or padlock could be applied. A development of this made the locking hole much larger so that a chain could be threaded through to secure.¹¹ This hole was often cross shaped to take the links of a standard straight link chain (Fig.27). This type of closure is seen in its most sophisticated form in a restraint that seems to have come into use in the late medieval period, the cap wrist lock, though the example illustrated may be modern (Fig.28).¹²

A shackle commonly used in prisons at least until the late eighteenth century is the wrist lock, usually a heavy contraption shaped to fit a wrist neatly. It uses one or two rivets to lock and then is fastened to a variety of chain and fetter combinations (Figs.29 & 30). This seems to be the type of shackle that immediately preceded the modern darbies in British prisons and a considerable number of them are preserved in the Prison Service Museum and at Lancaster Castle.

Restraints were made which show a resemblance to modern handcuffs and leg irons in that they have integral locks. The locks tend to be rather massive and no two are identical, but the pair of handcuffs illustrated is said to be English, of about 1650 (Fig.31).¹³ Sometimes the restraints are of quite sophisticated design and very well made (Fig.32). In Asia and Africa where metal restraints were made, the so-called "slave-irons" were the usual pattern, the pair of handcuffs illustrated is thought to be Egyptian (Fig.33). An example of a type that is perhaps midway between these two basic patterns is displayed in Chillon Castle in Switzerland. This uses a locking method on one shackle which requires the threading of the joining chain somewhat like the puzzle lock (Fig.34).

Also in Chillon Castle, in the deep cellar made famous by Byron's poem about the imprisonment of the Swiss patriot Bonisard, is an example of another type of restraint popular in medieval times, the collar (Fig.35). In Scotland this was known as the "jougs" and many examples can be seen on churches, tollbooths and mercat crosses there. Good examples can be seen at Stobo Kirk, Abernethy Round Tower and Kirkcudbright Tollbooth. A more complicated form of this restraint is that known as the "scolds bridle", which carries the collar a stage further by adding a full head restraint, usually with some sort of gag to fit in the mouth (Fig.36). This is carried yet further in various kinds of mask restraints (Fig.37).

Another common practice for restraining prisoners was the practice of putting them in cages, usually made of iron, which were then suspended from the towers or walls of castles, palaces or even churches. For example, several can be seen hanging on palace walls in Mantua (Italy). A similar device is the gibbet iron, which is effectively an extra small cage in which the bodies of executed people could be hung up and displayed until they rotted away (Fig.38). There are accounts of these being used to hold live prisoners, who were then hung up in some suitably exposed position until they died.¹⁴ The most extreme version of this individual cage idea of completely enclosing the body must be that restraint known as the "Iron Maiden", though it goes beyond mere restraint, as it incorporates torture and murder accessories.

A story is that in the Bastille in Paris (France) certain cells were so deep that they flooded at high tide in the river Seine. It was then said that prisoners were given a bath – *bagne*. Similar conditions pertained in some Italian prisons – the Italian word is *bagno* – and that word was used for the restraints worn by the prisoners at the time. The *bagno* is a handcuff rather like a large thumbscrew

(Fig.39) and after it is screwed down onto the prisoner's wrist it is locked with a hammered ring. It is sometimes said that it is of Chinese origin. This type of restraint is still used by the Italian police, although it is padlocked.

Last and in a sense least, must be mentioned the thumbscrew. Not so much a restraint, more a torture device, certainly the heavier patterns seem to have been made to inflict severe pain by the tightness with which they could be applied. The simpler ones were clearly designed as restraints (Fig.40) although if applied behind the back and then used as the fastening point for a rope to haul a prisoner up, they too were an effective means of torture.

1. There is a very good picture of a prisoner having his irons riveted on in Martin McColgan's *Russia 1881-1921*, p. 42.
2. "Bobby" is the English nickname for a policeman. This comes from the name of the Prime Minister of the time of the formation of police forces in England, Robert (Bobby) Peel. They were also known as "Peelers".
3. Cory Malcolm, *Iron Bilboes of the Henrietta Maria*.
4. Brian Ashley, *Law and Order*, p. 14.
5. Ibid. p.15
6. Restraint chairs were used well into modern times, the museum at Lancaster Castle has two very fine chairs, probably dated to the early nineteenth century. Such restraints are still used, see the Straitjackets section in the Miscellany I chapter.
7. Michael Brehelmaus, *De Gevorgenpoort*. Museum guidebook.
8. Oxford English Dictionary. GREENE Art Conny Catch ii. 31.
9. William Baly, *Report on the Convict Establishment at Gibraltar*.
10. S.A. French Catalog of Police Supplies, 1887, lists "Bean" type leg-irons, double or single, with six feet of chain and weights at 12, 18, 25, 35 or 50 pounds.
11. This arrangement survived well into modern times in the gang chains of the Victorian period that are described later.
12. Cap wrist locks survived well into the modern period and were used in British prisons until the middle of the 20th century.
13. There is another good example on display at Penhow Castle in Gwent.
14. This was a common practice in the West Indies for punishing slaves who had revolted.
15. See Charles Beard, "The Iron Maiden of Nürnberg".

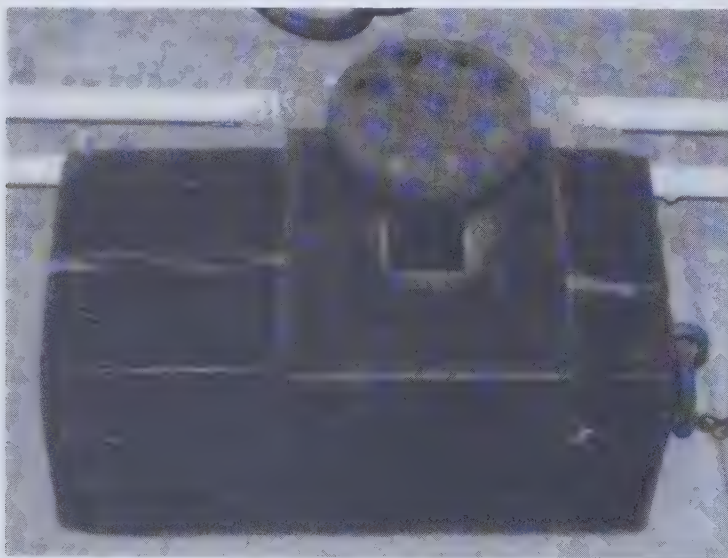


Figure 1. Riveting anvil at HM Prison Service Museum. Newbold Revell.



Figure 2. Collar and leg-irons in Gradara Castle, Italy.



Figure 3. Bilboes (York Castle).



Figure 4. Nautical rigging shackle.

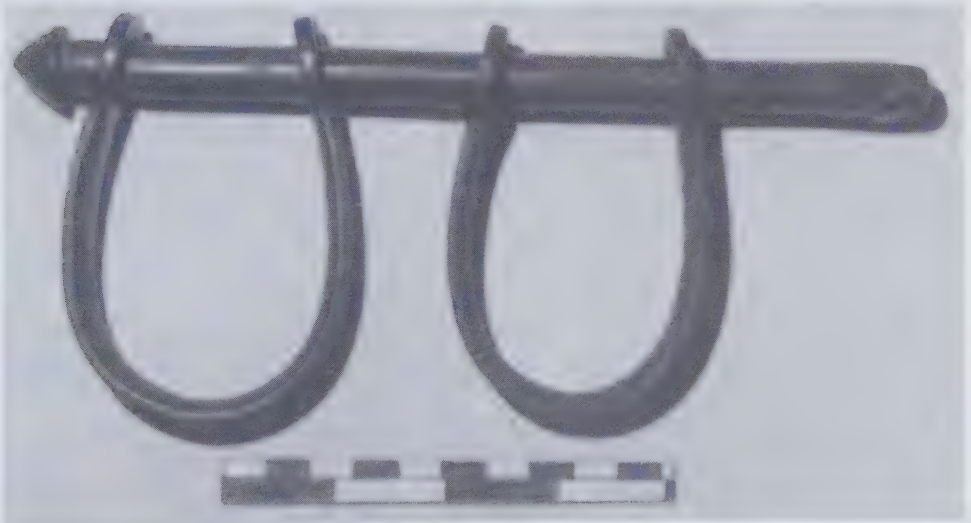


Figure 5. Lincolnshire "Bobby's" bilboes (Museum of Lincolnshire Life, Lincoln).



Figure 6. Bilboes fixed to the deck of HMS Victory (Postcard).



Figure 7. Historical drawing of a prisoner tied in a stock.

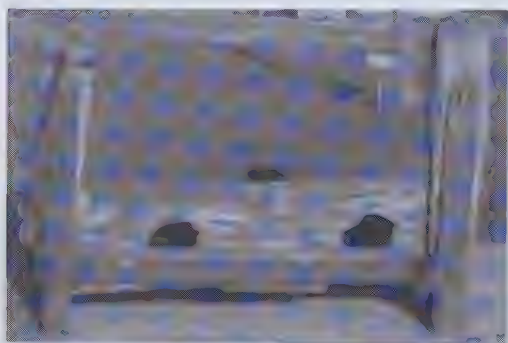


Figure 8. Stocks on the green at Stow-on-the-Wold (Glos.).



Figure 9. Movable stocks at Melksham (Wilts.).



Figure 10. Reproduction pillory (Galleries of Justice, Nottingham).



Figure 11. Whipping post in use in Delaware (United States of America) in the early twentieth century (Anti corporal punishment pamphlet).

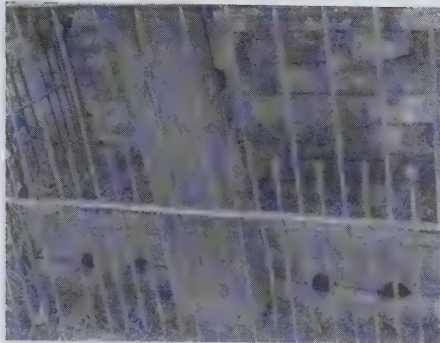


Figure 12. Combined stocks and whipping post at Farnhope (Herefordshire).



Figure 13. Finger stocks in the parish church at Ashby-de-la-Zouche (Leicestershire).



Figure 14. The iron stocks at Painswick (Gloucestershire).



Figure 15. Prisoner in the stocks in Hong Kong (Kevin Sinclair, *Asia's Finest*).

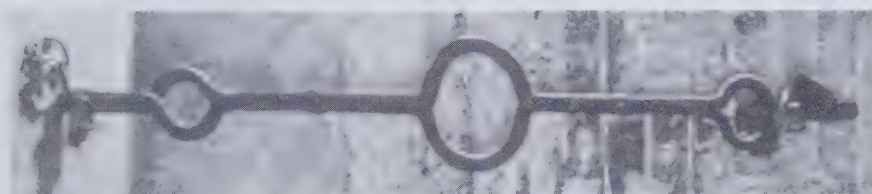


Figure 16. Restraint iron in Norwich Castle (Postcard).



Figure 17. Drawing of the "Flute" (Unknown dealer's catalogue).



Figure 18. Prisoner put in the cangue (Kevin Sinclair, *Asia's Finest*)



Figure 19. Ducking stool in Leominster Parish Church.

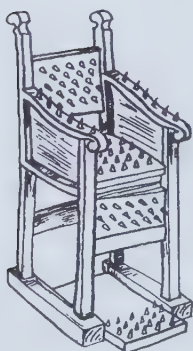


Figure 20. Drawing of a torture chair (Unknown dealer's, catalogue)

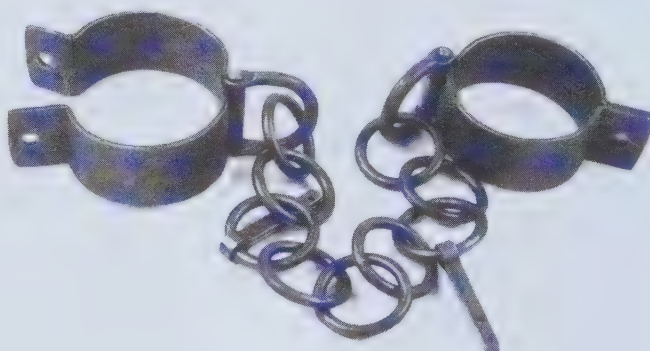


Figure 21 Medieval manacles (Museum Mesta Brna, Brno, The Czech Republic). (What the pins fixed to the chains are used for is unknown).



Figure 22. "Skeffington's Daughter" in the Tower of London (Royal Armouries Photograph).



Figure 23. Two views of the restraint belt, one including the foot bilboes, in the De Gevangenpoort museum in The Hague (The Netherlands) (Guidebook and postcard).



Figure 24. Belt and harness in Ghent Castle (Unknown).



Figure 25. A seven pound bazil surrounded by various restraints:- heavy handcuffs, chainless leg-irons, some "plug-8" handcuffs, a set of bilboes and a wrist lock (Lancaster Castle).



Figure 26. Shackle securing collar (Museum Mesta Brna, Brno, The Czech Republic).

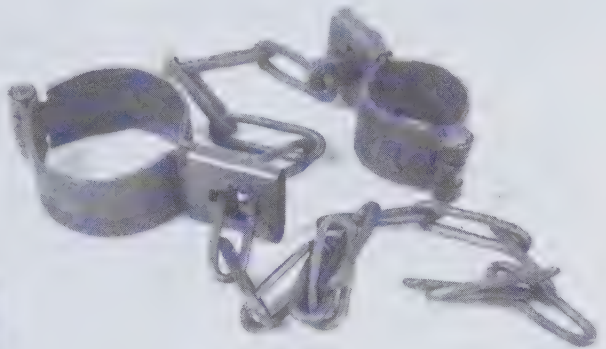


Figure 27. A fetter and manacle set showing a chain threaded through cross shaped holes. (Museum Mesta Brna, Brno, The Czech Republic).



Figure 28. Cap wrist lock with cross shaped holes (Museum of Lincolnshire life, Lincoln).

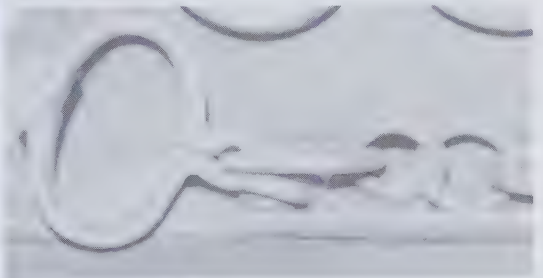


Figure 29. Wrist lock, with attached chain (Lancaster Castle).



Figure 30. Heavy wrist lock (HM Prison Service Museum, Newbold Revell).



Figure 31. English manacles (Chris Gower Collection).



Figure 32. Solid state handcuffs (Unknown).

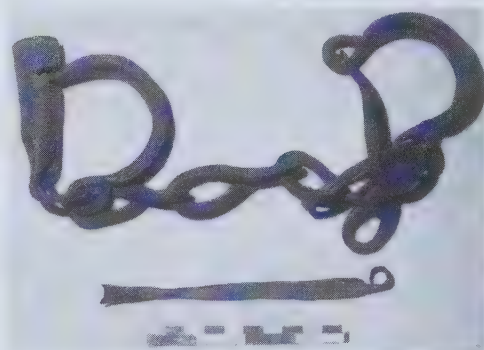


Figure 33. Manacles found in Egypt by soldiers of a Lincolnshire regiment (Museum of Lincolnshire Life, Lincoln).



Figure 34. Manacles on display in Chillon Castle (Switzerland).

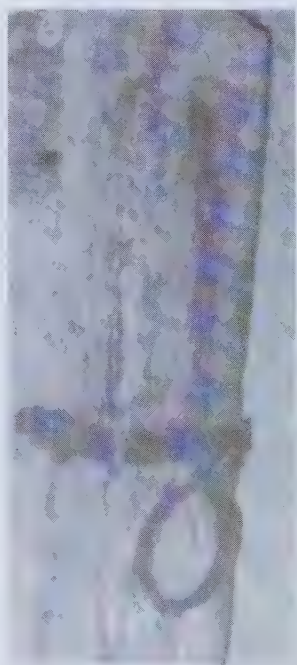


Figure 35. Collar and chain in the dungeon of Chillon Castle (Switzerland)



Figure 36. Scold's bridle on display in Lancaster Castle.

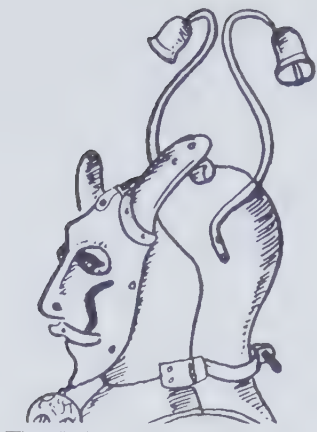


Figure 37. Drawing of a mask restraint (Unknown dealer's catalogue).



Figure 38. Gibbet irons at the Tower of London (Royal Armouries photograph A9-878)

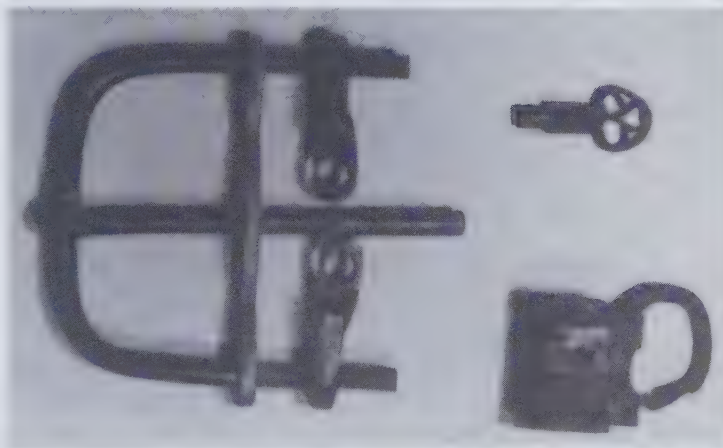


Figure 39. Bagno handcuff (Jon Oliver collection).

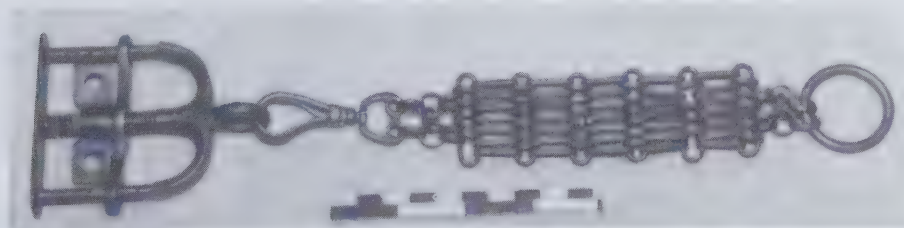


Figure 40. Thumbscrews (Blaise Castle House Museum, Bristol) (the ornate chain is not part of the original design, but is shown as how the piece is kept in the museum).

4. MODERN RESTRAINTS.

Assuming, from the point of view of this study of restraints, that the modern period started in about 1700AD, then for the first one hundred and fifty years or so various forms of the barrel lock were the normal means of fastening lockable restraints. The standard "darby" handcuff, probably introduced in the late 1700's, changed very little in the period. Indeed it lasted well beyond that century and a half virtually unchanged, being made right up to the present day, a fact which makes the dating of specimens difficult. Generally speaking the earlier ones are of a heavier construction – but note the heavy ones made by Reuben Craddock & Sons in the 1940's – and those with keys of a more ornate design tend to be older. Words like BEST, WROUGHT and HARD engraved on handcuffs are probably indicative of pre-twentieth century manufacture, as is engraved decoration (Fig.1).

Old fashioned riveted restraints also remained extremely common, particularly in situations like the slave trade, where lots of cheap restraints were applied for long periods to large numbers of individuals. Locks were still by comparison expensive and also liable to damage by salt water and body wastes in the notoriously appalling conditions of slave ships.

In the mid nineteenth century, particularly in the United States of America, there was much experimentation to produce secure restraints which were simple to operate and cheap to mass produce. After Adams' invention of the adjustable handcuff there were numerous improved designs, probably the most successful of which were those of the Tower, Bean and Mattatuck companies. Carney's invention of the swinging bow handcuff in 1912 completely changed the scene and almost all modern handcuffs are variants of his pattern. The late twentieth century has seen another surge of inventive ideas with the use of modern plastic materials and electronics. Complicated total restraint systems such as transport kits have been devised, with the "Black Box" type handcuff security cover playing a key role.

Stun belts and electronic tagging devices have appeared and also complex high security restraint chairs. These devices will be described in some detail in the following chapters and sections. This Modern chapter concerns itself with handcuffs, leg-irons and related items and its sections are arranged by continent and country, although, this being a book by an Englishman, the United Kingdom of Great Britain and Northern Ireland gets a section to itself. All other modern restraints are dealt with in the subsequent chapters.

A problem with modern restraints concerns the ownership of the various manufacturing companies and the connections between them. This is such a complex matter that the author has generally left it unresolved and merely describes items in the way most readily recognisable to those who are interested in these things. Links like Hiatt in Britain and Hiatt-Thompson in the U.S.A. are obvious, but some, like the Chubb/LIPS connection are just briefly mentioned. Smith & Wesson is now a British owned company, but all their manufacturing and associated facilities are where they have always been, so that company is dealt with as belonging to the U.S.A. In many cases the actual manufacturer is not known to the author and these are listed as UNKNOWN MAKER. This seems to be particularly the case in those countries which have or had Communist regimes.

The vast majority of twentieth century handcuffs are variants of the Peerless design. The quality of manufacture varies greatly, but the better made items usually have both a left and a right shackle. This means that, when the handcuffs are applied so that both shackles open the same way, the keyholes are on the same side. This should be observable in the illustrations in this book. Stainless steel items are also usually of better quality.

Modern handcuffs and leg-irons etc. have a variety of finishes. The simplest method is to polish the metal. Often a "blueing" method, like that used in gun making, is used. This involves treating the metal with phosphoric acid to produce a thin coating of iron phosphate as a preservative. Similar is a black coating produced by an anodising process, sometimes called "black oxide" finish, this is particularly used with items made of aluminium alloy. Uncommonly, some kind of painting, lacquering or enamelling, such as that known as "Parkerising" is used. However, by far the most popular method of preservation is electroplating, usually with nickel, but sometimes chromium or rarely cadmium.

It is interesting to note how often gun manufacturers also make handcuffs. In England there is Civil Defence Supply, in Belgium, Browning, in France Manurhin and in The Czech Republic, Bren. In the U.S.A. there are Arms Tech., Colt, Harrington & Richardson, Iver Johnson and Smith & Wesson. All of these companies make, or have made handcuffs at some time.

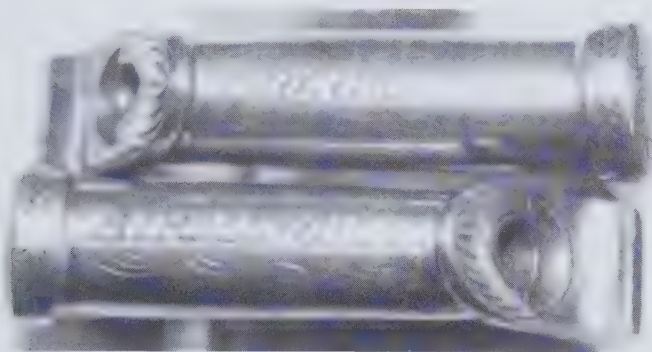


Figure 1. Ornately decorated pair of Hiatt darbies of about 1840 (West Midlands Police Museum, Birmingham).

A. THE UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND.

There have been many firms engaged in the manufacture of restraints in this country, particularly during the nineteenth century. Most ceased trading before World War II, probably during the "Great Depression" of the late 1920's. The author has included at least a brief note on every company that he has been able to trace, but it seems inevitable that some have been overlooked. The issue is also clouded by the practice of some firms selling handcuffs under their own name although they were in fact made by another firm. The war also caused the loss by bomb damage of much information, for example, the Hiatt company factory in Birmingham was hit by incendiary bombs and all the company records were destroyed, save for a portion of a catalogue. The company has been in existence since about 1780 and is by far and away the most important one with regard to British restraints and its products are the ones most commonly seen. The company's history is virtually synonymous with the history of British restraints.

Many collectors, particularly in the United States of America, believe that the swinging bow handcuff didn't appear in Britain until quite late and that the Hiatt 1960 model was the first in use here. Hiatt themselves issued two earlier models, one in the late 1930's, but the most remarkable fact is that one British firm, Hudson, was making a swinging bow handcuff in the early 1920's.

1. HIATT & CO. LTD.

The company name was originally HIAT and that spelling was used until at least 1832. The second T was added sometime later, which helps dating the earliest models. The earliest Hiatt handcuffs are of the darbies type and often of very heavy construction. The strap hinge is probably an early feature, originally real, in that the hinge is made by bending a tapered end of one half of the hinge back through a hole in the other half (Fig.1). With later types, a false strap hinge is used, one half of the hinge is of thick metal, shaped to look like a strap, this is then drilled and a pin inserted to turn the hinge. It is probable that the company started making lighter weight models without the strap hinge in the mid nineteenth century and continued making both types for a long time. The heavy strap hinge pattern handcuffs were made at least until World War I.

The plug lock is probably the earliest locking system, most commonly seen in the various forms of “plug 8” handcuff (Fig.2). A very heavy form of the “plug 8” is often called the “Boer War” type, which dates it to about 1899/1900. Ordinary chain link handcuffs (Fig.3) and “plug 8” leg-irons with this type of lock were also produced (Fig.4).

The barrel lock lighter weight darbies were made in a range of at least three, but probably five, different sizes and it seems that the numbers 1 – 5 frequently marked on the shackles refer to these sizes (Figs.5 & 6). The smaller sizes were meant for women or children and the larger sizes for men. When the “Scotland Yard” pattern of adjustable handcuffs was brought out, possibly in the late nineteenth century, but more likely in the early twentieth century and certainly by 1905,¹ the large and small sizes seem to have been dropped (Figs.7 & 8). A standard size and shape was soon established and nearly all twentieth century models seem to be of this type. One exception is a lighter weight pattern, known as the “Superintendent” model, which is of a slightly larger than standard size. With chain link handcuffs, the standard linkage consists of two rings separated by a swivel, but early models often have four rings and a swivel and this configuration persisted with some handcuffs of the “Superintendent” pattern (Fig.9).

A solid state pattern, commonly called “Irish Eights” was made, also in at least two different sizes. Because there is only one lock, the shackle with the lock is usually somewhat larger than the other one (Fig.10). There is a version of the “eight” pattern which consists of two ordinary shackles welded or riveted together. The shackles may open the same way or opposing, the same way probably being the earlier pattern. This type also includes leg-irons.

Darbies with a 14 inch (35cm) bar linkage, in handcuff and leg-iron sizes were made in Victorian times. It is said that this was primarily for use in the colonies and particularly in India. There was a revival of this type in the mid 1970’s when the company produced them at the suggestion of Chris Gower, primarily for collectors.² Some of these later one are nickel plated (Fig.11).

Unusual variants of the “Scotland Yard” pattern handcuff, available until the 1950’s, are the models 124 and 125 flexible handcuff. Model 124 has a standard “Scotland Yard” pattern key (Fig.12), whilst model 125 has an externally threaded key. The curved part of the shackle of these handcuffs is made of articulated pieces, designed to conform to the shape of the prisoner’s wrist, but they are difficult to apply.

Ordinary darby handcuffs which use the externally threaded key are known as “Sheffield” pattern and were introduced during the first decade of the twentieth century (Fig.13). The early screw down key type survived as the “Home Office” pattern well into the twentieth

century and was used as a high security handcuff in British prisons, probably until the introduction of the Chubb "Escort" handcuff (Fig.14).³

In about 1970 a non-ferrous metal casting process was used in the manufacture instead of the previous wrought iron method which used expensive hand finishing techniques. Standard (Fig.15) and "Scotland Yard" pattern darbies cast in this metal are still produced by the firm.

Hiatt darbies are often marked with a variety of numbers for which no one has yet provided a satisfactory explanation. Some of them, such as the numbers 1 – 5, are almost certainly size indicators, #1 being the smallest. Some of the other numbers may refer to manufacturing batches and some may be users' serial numbers. Occasionally there is lettering, often identifying the police force of the users. At one time the stamping tool used to seal the plug in the top of the lock case was usually a letter and each worker doing this job was allocated a different letter. The arrow mark denotes that the item was made for government department use, e.g. the army. One mark in particular is interesting, that is M & C, which appears on Hiatt handcuffs with the dates 1915, 1916 and 1918. Handcuffs of the firm S.M.Co.⁴ also turn up marked M & C 1916. This seems to imply that the M & C mark was in some way connected to military use in World War I, but neither the Imperial War Museum in London or the Royal Military Police Museum in Chichester could throw any light on the subject. However, there is a pair of Hiatt handcuffs in the Chris Gower collection which bears the date 1895 as well as these letters, so it is obvious that this hypothesis is wrong. A suggestion is that the letters may mean Military and Colonial, implying use in the armed forces and in the colonies.

Leg-irons are larger versions of the handcuffs and were at first made in two standard sizes, but by the second half of the twentieth century, only one size was produced (Figs.16 & 17). The chain linkage has various lengths, sometimes with massive links (Fig.18). Some long versions having a ring in the middle for attaching handcuffs or to some fixed object such as a wall (Fig.19 & 20). As previously noted, "eights" pattern leg-irons were also made (Fig.21). Collars and combination sets of handcuffs and leg-irons were also made. The collars are yet larger versions of the basic pattern, but usually have plug locks. The firm offered "nigger collars" until early in the twentieth century, production probably ceased at the outbreak of World War I (Fig.22).

Until World War II, Hiatt made Bean (Fig.23, 24 & 25) and Tower pattern restraints, under licence from those U.S.A. firms, so these handcuffs can be found with Hiatt's trade mark.⁵ Almost identical to the Tower handcuff is Hiatt's so-called "Nigeria" pattern (Fig.26).

Hiatt started making swinging bow handcuffs in the late 1930's, making Peerless handcuffs under licence, using a British patent dated 1931 (Fig.27). Double locking is with a wedge shaped peg on top of the key which is inserted into a hole in the back of the lock case. These were still being offered for sale in a 1982 price list. In 1953 they brought out the "Reliant" model (Fig.28) which is unusual in that it has a "star" wheel locking mechanism⁶ instead of the normal ratchet pawl and which does not have a double locking facility.

Next came the well-known "1960" model, which continued in production until 1997. There are at least three⁷ distinct versions of the "1960" model, which are shown in the illustrations (Figs.29,30,31&32). This handcuff double locks with the key via the keyhole. It was followed by the "1970" model, still in the 1982 price list (Fig.27). This is a rather slim pattern which requires a key with a narrower bit than standard to open it. Double locking is by the same method as the "Peerless" model, but the hole is in the front of the lock case.

A "1980" light weight aluminium alloy model was designed and a few prototypes were made (Fig.33). This model proved unsatisfactory and was replaced by the "Snap-on" pattern introduced in 1982. Prior to 1970 the linkage of the shackles was an adaptation of that used with darbies, a single swivel in the middle. With the "1970" model the double swivel type linkage was introduced and with the "Snap-on" range, a hinged linkage was introduced as well as chain link models.

The "Snap-on" range handcuffs were first marked simply HIATT (Fig.34a), but when a new owner took over the firm in 1983 the present markings were introduced and an S added to the name (Fig.34b) (though this was occasionally done on earlier packaging - see the boxes illustrated (Fig. 49)). Later the "De Luxe" range was introduced which has shackles 15% larger than the norm. The standard finish is nickel plate (Fig.35), but "blued" steel (Fig.36) and aluminium alloy (weight 130 gms) models are made. Model 2020 has a push button operated double locking system, the button replacing the usual hole in the top of the lock case (Fig.37). Hinged models are made in standard and "De Luxe" sizes, in all three finishes and also in an elongated form (Fig.38).

In 1992 Hiatt entered into an arrangement with Dennis Elam⁸ to fit his "Quik-Kuf" plastic handle to the Hiatt model 2010 standard chain link handcuff (Fig.39) and these were sold as "Quik-Kufs" until November 1993,⁹ when Hiatt brought out their own version, the "Speedcuff" (Fig.40). This handcuff is only made in the "De Luxe" size and its obvious difference to the "Quik-Kuf" is that the handle is symmetrical in shape. The "Ultimate" pattern, a hinged type that locks into the rigid form on withdrawal from its pouch, came out in 1997 (Fig.41), also only in "De Luxe" size. This handcuff requires the key to unlock the hinge in order to return it to its pouch.

For a short time in the mid 1980's, Hiatt offered the French Manurhin high security handcuff as their model "Matra 85/88". The intention was to manufacture it under licence, but the plan came to nothing. The firm eventually brought out its own high security model HCSS9 in September 1999 (Fig.42). This is a hinged handcuff which has a seven disc wafer lock for the double lock placed similarly to the Manurhin model. An interesting variation of the high security theme is the "C range". These chain linkage, hinged and "Big Brutus" model handcuffs are modified by the addition of pieces of metal, riveted and welded between the cheek plates of the shackle (Fig.43). This prevents them from being forced apart to spring the rivet, but destroys the swinging bow capability. However, they are particularly effective when used with the "Blue Boxes".

The firm ceased making leg-irons in 1995 when the British government responded to an outcry, largely at the instigation of Amnesty International, about the use of British made leg-irons on an Englishman in a Saudi Arabian gaol. The manufacture and export of leg-irons was banned in this country, though not the importing of them.¹⁰ The last leg-iron type was a larger version of the swinging bow handcuff (Fig.44).¹¹ Leg-iron size shackles fitted with two ring linkage or hinged are supplied as large handcuffs called "Big Brutus" models (Fig.45).

During the later nineteenth and early twentieth centuries, Hiatt produced gang chains (Fig.46). These have cap wrist locks of at least three different sizes (Fig.47). After the wrist lock is closed over a prisoner's wrist it is secured by a metal sleeve or cap which, like the wrist lock, has a large round hole in it.¹² A chain is threaded through the hole and continued through as many others as required and locked with a small shackle, called an end lock. This is of the screw down plunger type on the early models and spring loaded plunger type later. These end locks can sometimes be seen in museums labelled as "child's handcuffs"! Since the 1980's the firm has also produced what is called a "closeting chain" (Fig.48). This consists of a chain about 9 feet (2.80m) long, with a standard Peerless shackle at each end and a third shackle

about 3 feet (90cm) from one end. This is intended for use when a transported prisoner needs to use the toilet.¹³

1. Hiatt's 1907 catalogue shows the "Scotland Yard" pattern and it is marked "PATENT". This implies a new invention and a recent introduction to the range of handcuffs offered, though the design was not in fact patented.
2. This may well be the first time that a major manufacturer produced items specifically for such a purpose.
3. But see the entry for Stedall & Son later for the description of another high security handcuff.
4. See the entry for this firm later.
5. Tom Gross is of the opinion that these were actually made in the U.S.A. and either given Hiatt's trade mark there or later in England after importation (see his *Manacles of the World*).
6. It is said that only 1,000 pairs were made and nearly half were returned to the factory because of a faulty ratchet "star" wheel.
7. Samples of a variant exist which appear to be made by doubling up the metal cheek plates to make a heavyweight handcuff. The swinging bow has ratchets like the Reliant model, that is, designed for a "star wheel" type of lock, but the locking pawls are of the ordinary kind. The keyway is not the usual round one, but looks like a large version of the standard pattern. They were definitely used by police in Canada in the mid 1960s.
8. See the entry for Quik-Kuf in the U.S.A. section.
9. See the entry for Civil Defence Supply below.
10. The use of leg-irons by law enforcement agencies is also banned, Britain is the only country in the world to do so.
11. These are still produced and sold by the firm's American associate company Hiatt-Thompson, see that firm in the U.S.A. section.
12. See the entry for Stedall & Sons later for description of use as handcuffs.
13. Notoriously, it was also used in the 1990s with pregnant women prisoners in hospital in Britain.

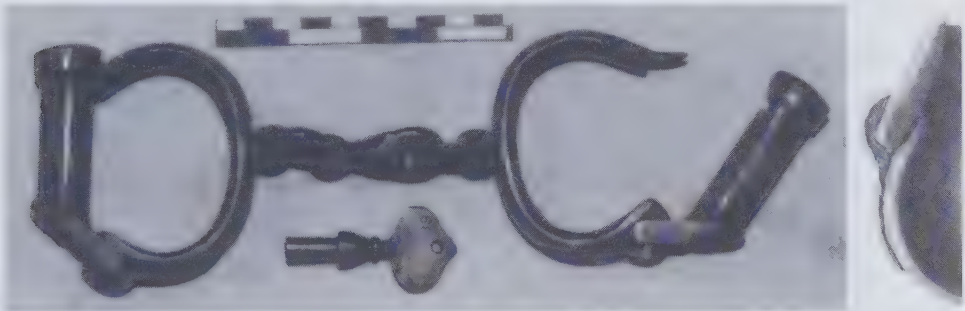


Figure 1. Heavy weight, strap hinge model 102 handcuffs (Chris Gower Collection).

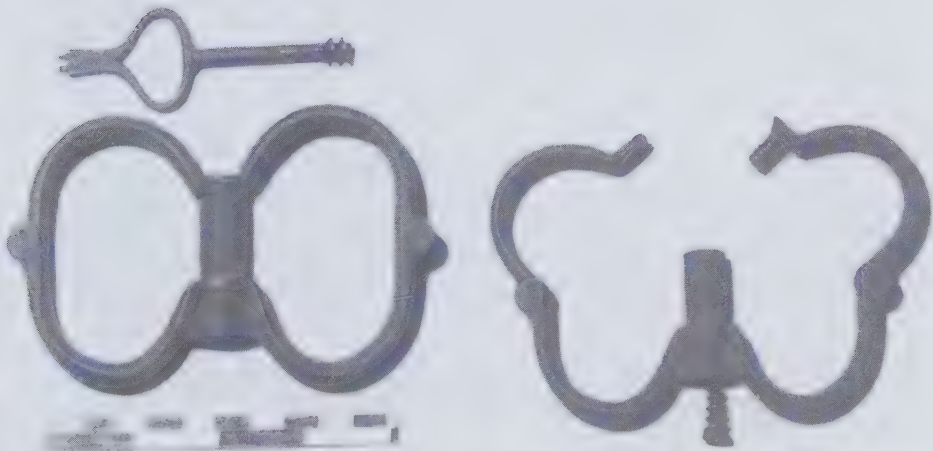


Figure 2. "Plug Eight" model. This is a rare type having the lock case in the centre instead of the usual position on the side (Museum of Lincolnshire Life, Lincoln).



Figure 3. Plug lock handcuffs (Chris Gower Collection).



Figure 4. "Plug eight" leg-iron (Chris Gower Collection).

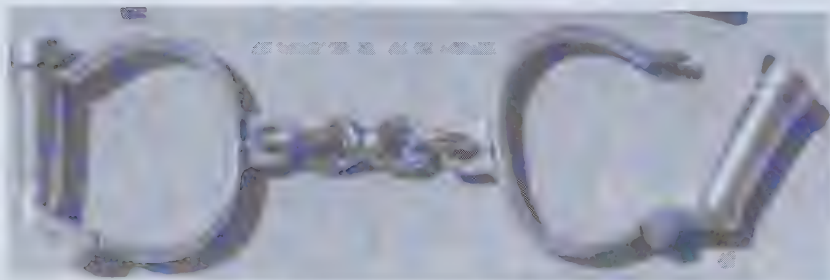


Figure 5. Standard darbies (note the neater swivels of post World War II models).



Figure 6. Small (# 1) and large (# 5) darbies.



Figure 7. "Scotland Yard" pattern handcuffs, with original box of the type used until the late 1950's.



Figure 8. “Scotland Yard” pattern handcuffs. These are made of nickel plated non-ferrous metal. The distinguishing features of the models made of this metal are the proud rivet head on the hinge and the new key design. Original box of the 1970’s (blue in colour) (note another swivel design).



Figure 9. “Superintendent” model handcuffs. Four rings and swivel linkage on the nickel plated pair [top], two rings and swivel on the polished steel pair [bottom].



Figure 10. "Irish eight" handcuff, with belt pouch.



Figure 11. Bar linkage handcuffs.

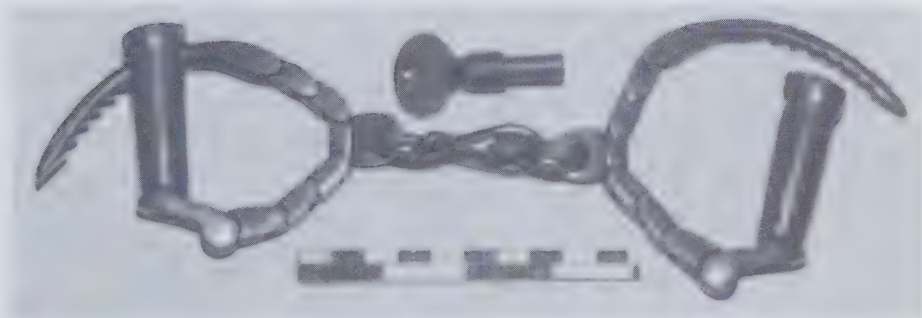


Figure 12. Model 124 "Flexible" handcuff (Chris Gower Collection).

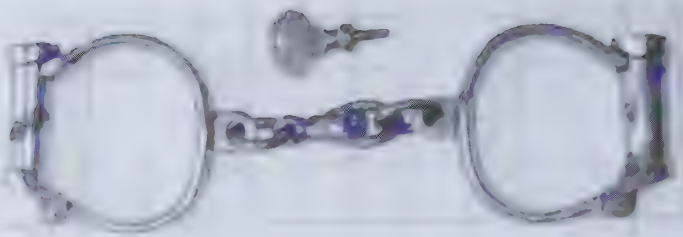


Figure 13. Sheffield pattern handcuffs (note the externally threaded key) (Jeff Hall Collection)



Figure 14. "Home Office" pattern handcuffs (note the key) (Chris Gower Collection).



Figure 15. Non-ferrous metal darbies (in later versions, the rivet head in the hinge is proud rather than flush like this pair – see fig.8 above).



Figure 16. Nickel plated steel leg-irons of about 1965. After World War II, there was only this one size produced.

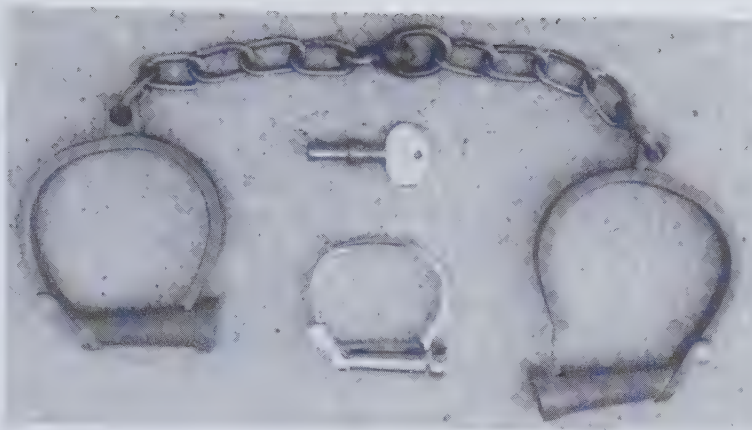


Figure 17. Non-ferrous metal leg-irons of about 1980. The single handcuff shackle shows the size.

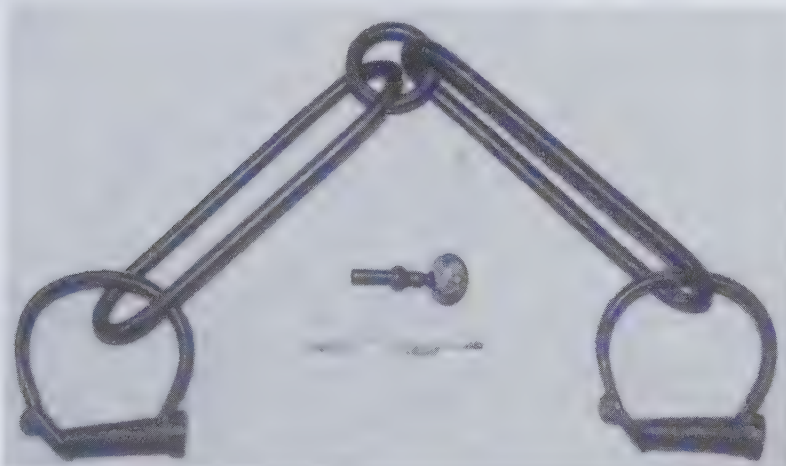


Figure 18. Nineteenth century heavyweight leg-irons (Chris Gower Collection).



Figure 19. Nineteenth century leg-irons, small size (Chris Gower Collection).

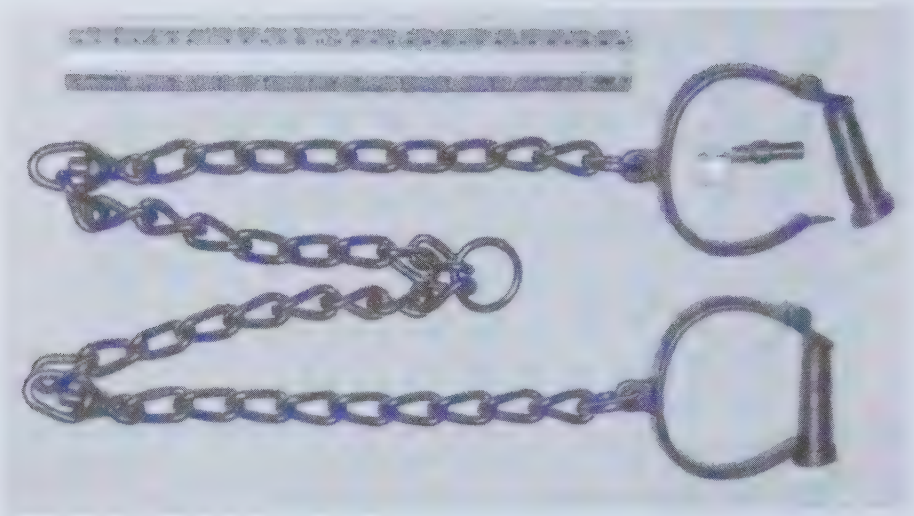


Figure 20. Long chain leg-irons of about 1940 (Jeff Hall Collection).



Figure 21. Nineteenth century eights pattern leg-irons (West midlands Police Museum, Birmingham).

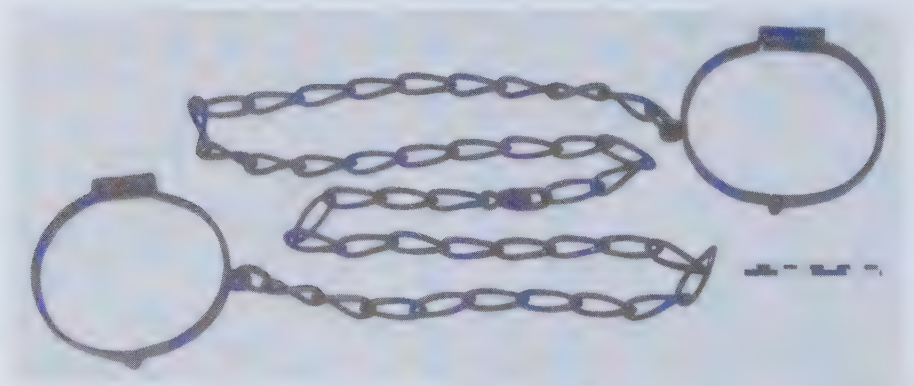


Figure 22. Plug lock "nigger" collars (Chris Gower Collection) .



Figure 23. Hiatt Bean, model 122, made with, or like these, without the anti locking buttons of the originals (Chris Gower Collection).



Figure 24. Hiatt Bean leg-irons (Chris Gower Collection).



Figure 25. Hiatt Bean handcuffs (Chris Gower Collection).

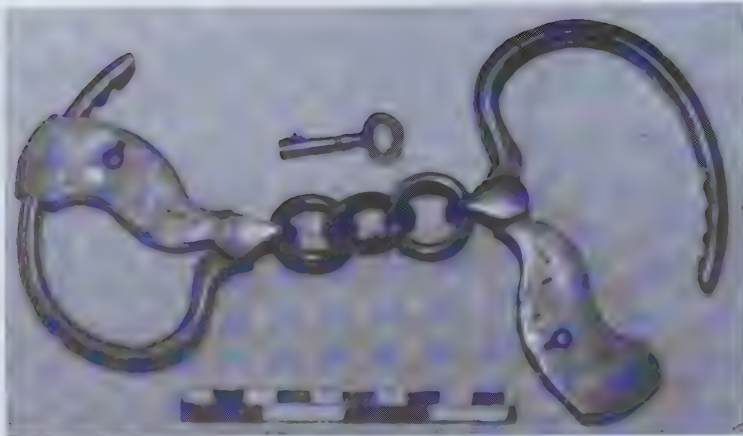


Figure 26. Model 121 "Nigeria" pattern (Chris Gower Collection).



Figure 27. "Peerless" model [bottom] and "1970" model [top] (note the different linkages and the double locking holes above the keyhole of the "1970" model).

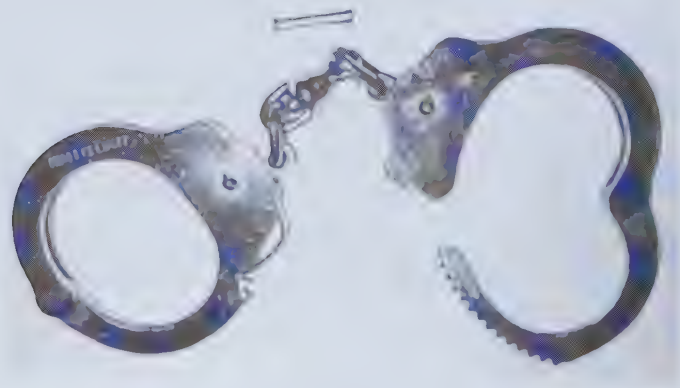


Figure 28. "Reliant" model (Mike Riccard Collection).

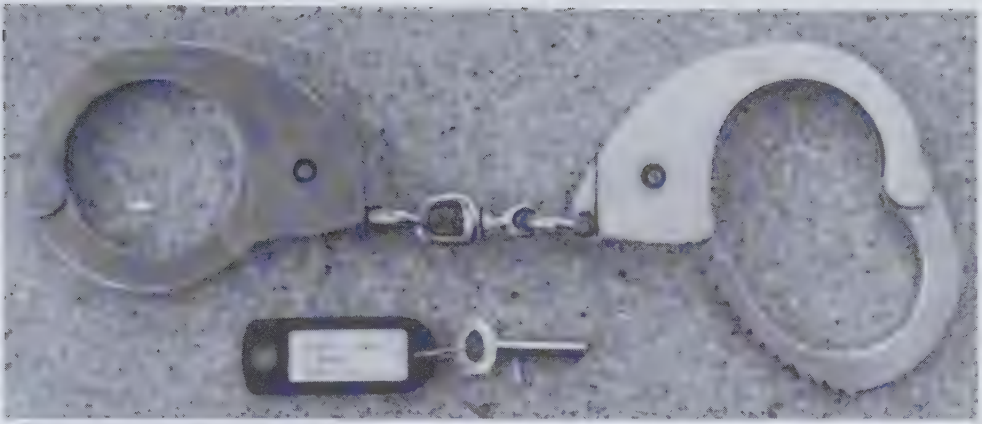


Figure 29. "1960" model, first pattern (commonly marked PATENT PENDING).

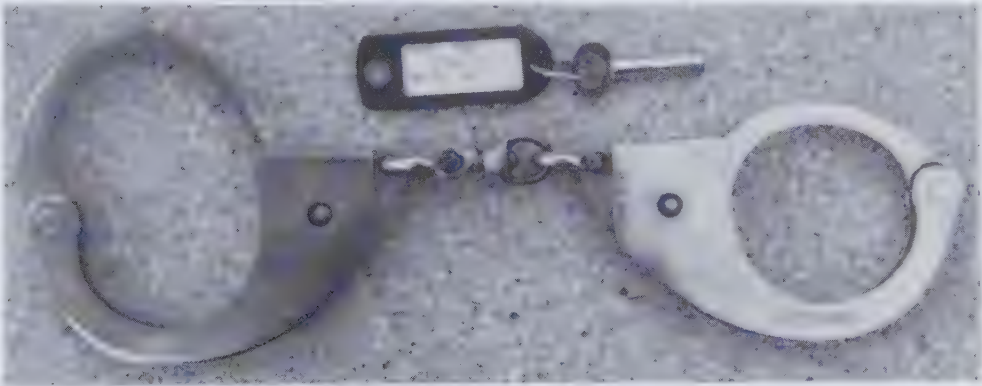


Figure 30. "1960" model, second pattern (note the much narrower jaw/bow).



Figure 31. "1960" model, third pattern (note the larger jaw, with 7 more locking serrations than the earlier models. The serration is like that used in the Reliant model). This model comes in two forms, like this with raised rivet heads on the lock case and the other with flush heads.

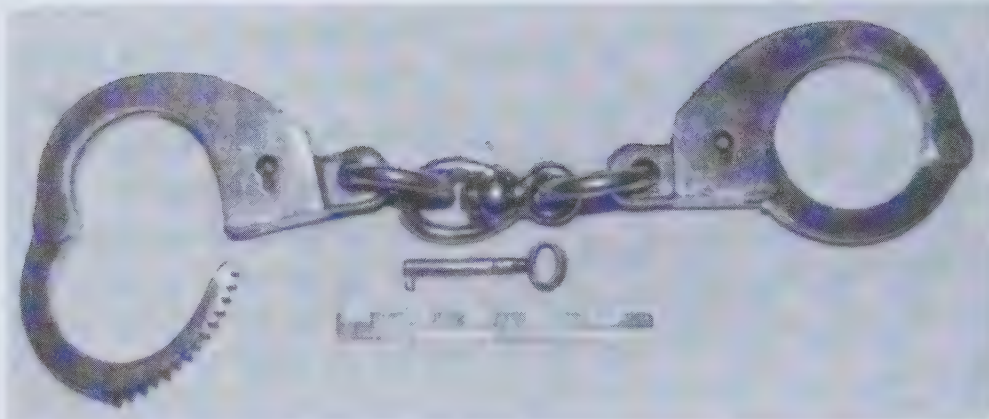


Figure 32. “1960” model, heavyweight pattern (note the key and keyhole) (Richard Hopkins Collection).

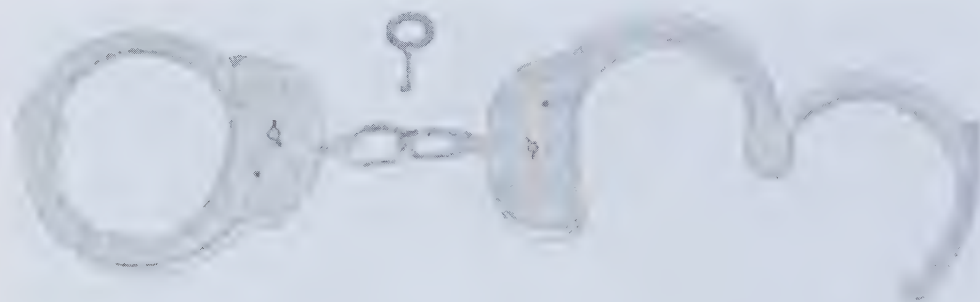


Figure 33. “1980” model. This model is double locked via the keyhole so it has two slots (Hiatt advertising leaflet).

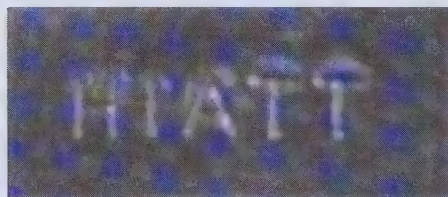


Fig.34a. Old HIATT trade mark.

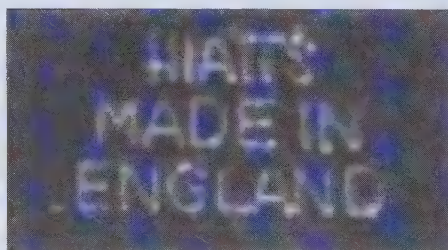


Fig.34b. Current HIATTS trade mark.



Figure 35 Model 2010 "Snap On" with original box of the current usage [blue in colour].



Figure 36. Model 2015 "Snap On", blued steel finish, with reverse of original box of figure 35 type.



Figure 37. Model 2020 showing the double locking mechanism at the top of the lock case.



Figure 38. Model 2050 [top], model 3050, aluminium alloy [middle] and model 2060, extended pattern [bottom].



Figure 39. "Quik-Kuff", model 2010 handcuffs fitted with the Q-K handle, with model 9060 black leather angled pouch with belt loop.



Figure 40. Model 2103 "Speedcuff".



Figure 41. The "Ultimate" model (note the third keyhole in the centre for unlocking the hinge).



Figure 42. Model HCSS9 high security model (note the two keys, the flat key is required to double lock the handcuffs and both keys are required to unlock from the double locked state).

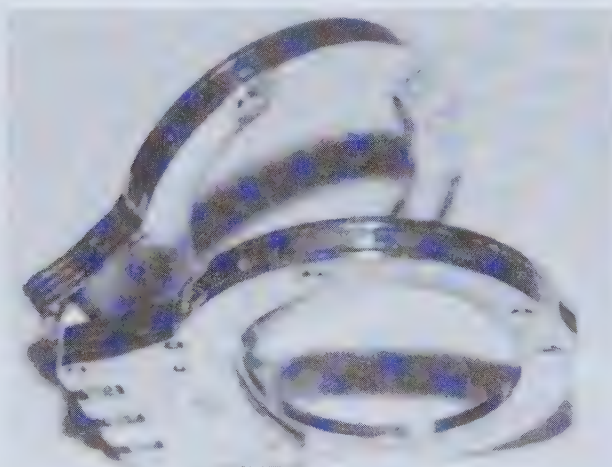


Figure 43. "C" range hinged model handcuffs with metal blocks riveted and welded between the cheek plates.

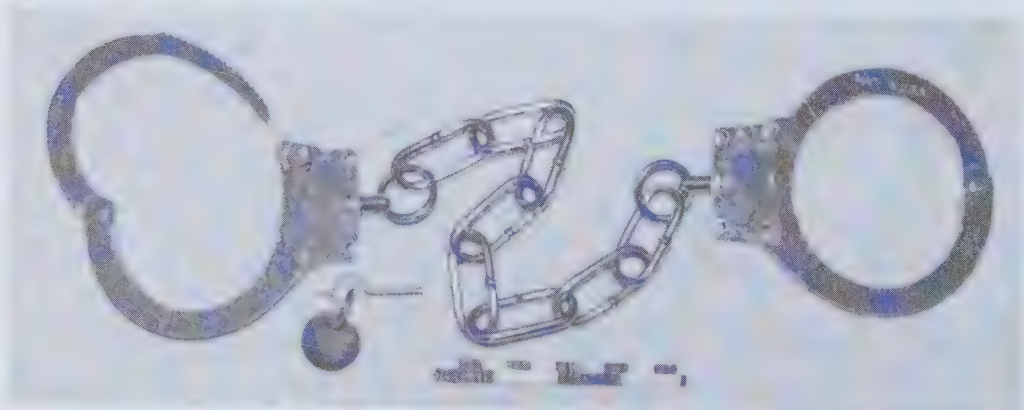


Figure 44. Model 5000 leg-irons.



Figure 45. "Big Brutus" large handcuffs (the single handcuff gives an idea of the size).



Figure 46. Gang chain. The end lock with this chain is of the spring loaded type and is probably not the original as it is nickel plated, unlike the rest of the chain (West Midlands Police Museum, Birmingham).

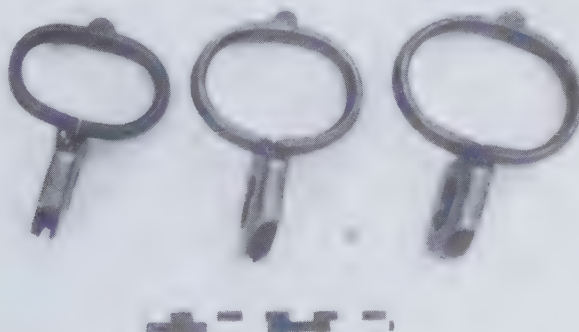


Figure 47. Three sizes of cap wrist locks (West Midlands Police Museum, Birmingham).



Figure 48. Closetting chain in use. The guard has the end shackle on his left wrist (the chain between the prisoner's wrists would probably be better behind his legs where it would be out of his way when using an urinal and give the guard some warning if he tried to use it as a weapon).



Figure 49. A selection of boxes from the 1970s and 1980s. Note that the Peerless model box shows the handcuffs with a two swivel linkage, as in modern practice, when in fact they only had the old darby type linkage. Note also the varying usage of the S in the company name.
The 1970 box is red, the others are in shades of blue.

2. FROGGATT.

This company was another of the many restraint makers that were in the Birmingham area, this firm in Bordesley. It is thought by some people that the firm existed before Hiatt came into being, but it seems more likely that it was founded in the mid 1800's. Some collectors believe that this firm may have been the first to produce plug lock restraints. However, these assumptions are by no means certain. What is certain is that the firm was taken over by Hiatt in the mid 1930's.¹ Their products generally looked much the same as Hiatt's, however they turn up less frequently, which seems to imply a smaller operation.²

- 1. The present owner of Hiatt, Geoff Cross, told the author that, a couple of years after he took over Hiatt's in 1983 a Mr Froggatt retired after fifty years service with the company. It would seem that part of the deal in the takeover was that the young Froggatt son should have a post in Hiatt. This would place the takeover in 1935.
- 2. The author has never seen any Froggatt items offered for sale in England in fifty years collecting!



Figure 1. Plug eight handcuffs (Yossie Silverman Collection).

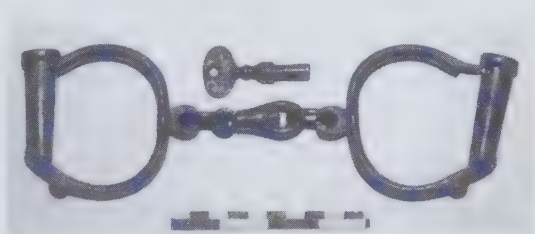


Figure 2. Standard darbies (Chris Gower Collection).

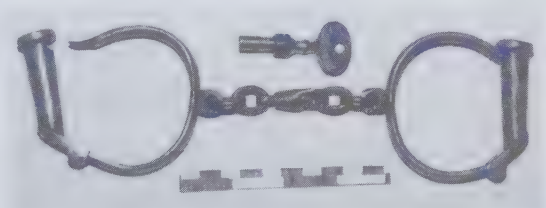


Figure 3. "Inspector" lightweight darbies (Chris Gower Collection).

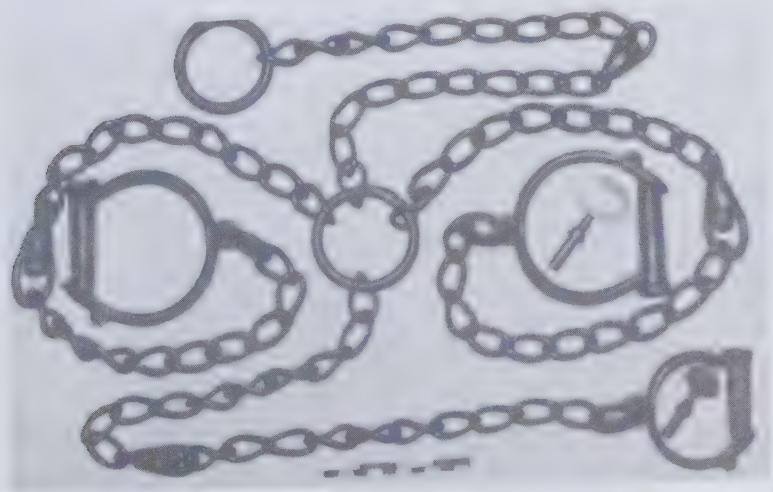


Figure 3. Combination set of leg-irons, single handcuff and retaining ring (Chris Gower Collection).

3. REUBEN CRADDOCK & SON.

This Walsall firm was at one time said to be Hiatt's main rival. A Reuben Craddock is listed in the Kelly's Trade Directory in Walsall in 1878 and the firm became Reuben Craddock & Son in 1896. The latest entry is for 1968.¹

For a large part of its history it seems that the firm did the bulk of its production for the British government as most of the items which turn up are marked with the government arrow sign. A very heavy construction with strap hinges is not a sign of early manufacture, quite the reverse. The earliest types in the author's possession are quite ordinary in proportions and do not have the arrow mark, nor do they have a date mark. They closely resemble the types that Hiatt was producing in the late nineteenth and early twentieth centuries. The makers name is almost always shown as R.C.S. Later models are usually marked with the date, the earliest the author has heard of is 1930 and it could be that undated examples are earlier. In the late 1950's the company brought out their only swinging bow model. It also made a very heavy plug eight handcuff, the type commonly called "Boer War" pattern, which was still available in the 1950's. These are drop forged rather than cast and as a result are quite robust, cast ones are easily cracked with a sharp blow. The firm made some handcuffs and leg-irons of brass. Gang chains were also made, at least one is known that has brass handcuffs attached.

1. None of the entries indicated that this company made handcuffs, it was always listed as a bit maker. This reluctance to indicate the manufacture of restraints in the directories is not unusual, which makes research difficult!

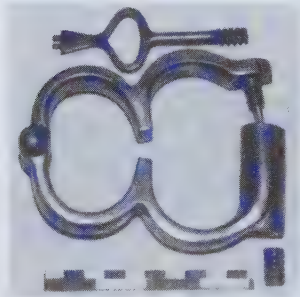


Figure 1. "Boer War" pattern plug eight handcuffs (marked V648 1954)
(Chris Gower Collection).



Figure 2. Short chain linkage darbies (Chris Gower Collection).

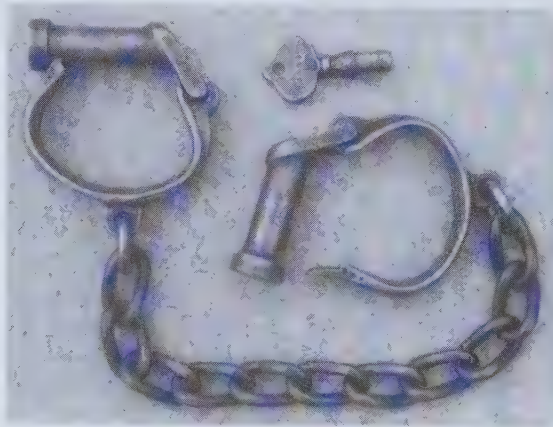


Figure 3. Long chain linkage, heavyweight handcuffs.



Figure 4. "Scotland Yard" pattern handcuffs (no date mark).

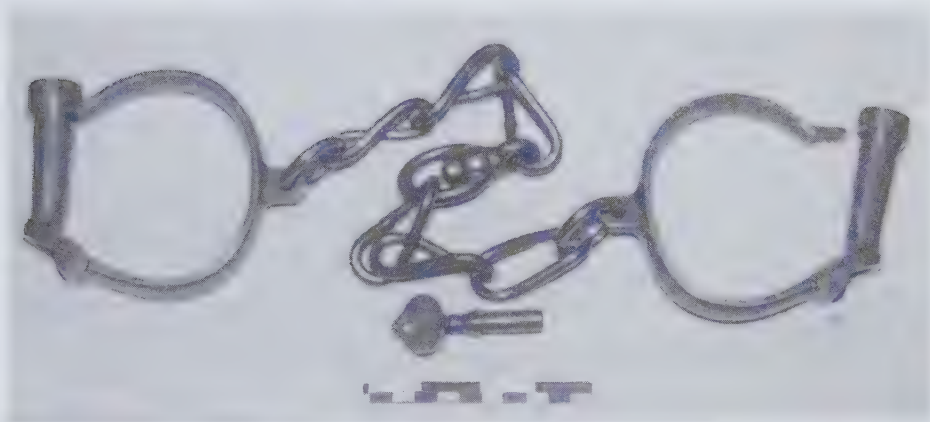


Figure 5. Brass leg-irons (connecting chain is steel) (Andrew Kerr Collection).



Figure 6. "Peerless" pattern handcuffs (Chris Gower Collection).

4. NICHOLS.¹

This firm must have been a major manufacturer² as its products turn up quite frequently, almost as often as R.C.S. items in the author's experience. They are usually typical darbies, indistinguishable from those of other makers of these restraints.³ The firm may have commenced operations in the mid to late nineteenth century, but there is a record of the company having made plug lock leg-irons⁴, so it could have been earlier. It probably ceased making restraints sometime before World War II.

1. As far as he has been able to ascertain, the author is not related to the founders of this firm!
2. A J.Nichols, key maker, is listed in a Willenhall trade directory in 1896/7. The only other firm of this name listed in the Birmingham area is Joseph Nichols & Son, wire makers and weavers, manufacturers of heavy duty cages for protecting industrial machinery. This firm could easily have had the ability to make restraints. It was established in 1841 and still operating in 1970, so the dates are right. It is the author's hypothesis that it is this firm which made restraints.
3. See the entry for GRIFFIN below for mention of its link with this firm. This link is a strong clue indicating that this firm made its own handcuffs, it is highly unlikely that Griffin would have teamed up with a firm which then subcontracted out its end of the arrangement. The reverse is also true for GRIFFIN!
4. See the GRIFFIN entry below for an illustration of a "plug eight" handcuff.



Figure 1. Standard handcuffs.

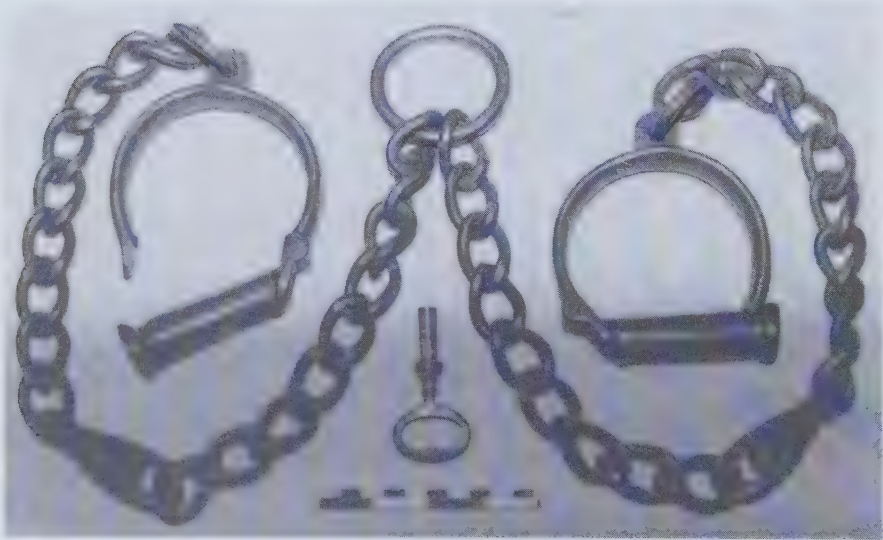


Figure 2. Long chain linkage leg-irons
(Museum of Lincolnshire Life, Lincoln).

5. FIELD & SON.

Unusually, this is not a Birmingham firm, but was based in London. Chris Gower is of the opinion that it was not a manufacturer, but had its products made for it by Hiatt and was that firm's London agent. During the period 1842 – 1883 the company was involved with a firm called PARKER,¹ which supplied uniforms and equipment to police forces, especially the Metropolitan police. Whether or not FIELD operated outside those dates is not known.

Handcuffs and leg-irons were made that are generally identical to those produced by contemporary firms and included plug lock models and gang chains with cap wrist locks. The markings on restraints vary, so that some are simply marked FIELD, but FIELD & SON is commoner. The PARKER, FIELD & SON mark can also be found.

1. Handcuffs marked PARKER exist which are thought by some to have been made by HIATT. However there is a firm called PARKER listed as a handcuff manufacturer in Birmingham in the mid 1800's.

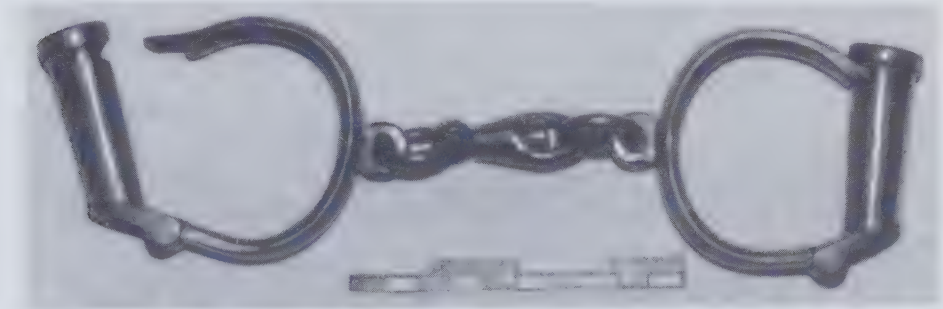


Figure 1. Standard darbies (Peter McCahon Collection).



Figure 2. Heavyweight darbies (marked FIELD & SON).



Figure 2. Prisoner in long chain linkage leg-irons (marked FIELD & SON)
(the handcuffs are the R.C.S. long chain model shown earlier).

6. WILLIAM DOWLER & SONS.

This was an older Birmingham company than Hiatt having been founded before 1774. It was still advertising in 1952. An advertisement circa 1905 states that the company “manufactures police accoutrements”. The firm supplied general police equipment and uniforms besides handcuffs. Some collectors think that this firm had its handcuffs made for it by Hiatt, but this is not the case. Handcuffs were made in their own factory until sometime around 1901, after which the firm of Hudson (see later entry) made them and marked them with the Dowler stamp.



Figure 1. Standard darbies (original Dowler manufacture).



Figure 2. Lightweight "Inspector" model darbies (Hudson Company Museum).

7. CHUBB.

This company was founded in 1804 by the Chubb brothers as a chandler's business in Portsea, Hampshire. In 1818 Jeremiah Chubb patented his "Detainer" lock in response to a British Admiralty's expressed desire to obtain an "unpickable" lock. Also in 1818, they set up a business in Wolverhampton to make locks and safes. The firm became probably the most famous of British companies in that business. There is an unofficial record that the company produced restraints around 1820 for the Prison Service. As was company policy in these matters until 1985, no identifying markings were put on whatever handcuffs or leg-irons they made then. It could be that some of the unmarked old irons that turn up occasionally are these, but no authenticated examples are known. The claims of some collectors to have Chubb darby types dating from the 1950-60 period are almost certainly false, the firm's representative told the author that he could find no evidence of darbies produced then. It is highly unlikely that a firm which makes sophisticated locks would have considered manufacturing such obsolescent restraints as darbies at that time.

In 1966 the model 1K52 Escort handcuff (Fig.1) was produced in response to a request from the Prison Service for a pick resistant and comfortable¹ handcuff to be used when prisoners are escorted from one prison to another or to court etc. The original design was Finnish and the handcuff was first made under licence from the patentee in Finland. The handcuff is not of a swinging bow type, but looks rather like a modified padlock. It had a ten disc lock at first, reduced to a nine disc lock in 1987, which required the keyway configuration to be changed. The earlier model has a keyhole flush with the lock case base, whilst in the later model the keyhole is recessed by about 6mm.²

The handcuff is adjustable to three sizes, but special inserts are available to allow smaller wrists to be accommodated, so effectively it has at least six sizes. These inserts were first introduced in 1970 as simple kidney shaped polished aluminium blocks (Fig.2). In 1981 a broad ring was added to the insert to increase security and the finish changed to black paint to match the shackle (Fig.3). Later three sizes of insert were introduced. #1 is the original size, #2 and #3 were made by machining down the original model to two smaller dimensioned pieces. The size numbers are embossed on them (Fig.6).

The lock case on the first model had a polished aluminium finish (Fig.1), but this was changed to black paint at the request of the Prison Service prior to 1974 (Figs.2 & 3). In 1985 the company name was embossed on the base of the lock case (Fig.4) and then in 1990 it was moved to the top of the case (Fig.5). Single shackles were issued, some of which have no retaining ring for the linkage chain. These are intended for use with a closing chain, the small ring on the end of which is threaded onto the shackle before it is closed on a prisoner's wrist.

In 1987 the company brought out a swinging bow model, the 1K70 Detainer handcuff (Fig.7). This is rather more robust than usual and uses a more secure lock, with a key larger than the standard, so that the so-called universal keys will not operate the lock. Double locking is by way of an external sliding push button, but the key is needed to undo the double lock. Most handcuffs of this model are keyed alike, so that the keys are interchangeable. However a few were made with restricted issue keys.

The Chubb company is associated with the Dutch firm LIPS (see later entry) which produced hinged handcuffs until well into the 1980's. Chubb considered a hinged version of their Detainer model in 2000 and some samples were made up. These were sent to Australia for evaluation by the Sydney police. The results of that trial must have been unsatisfactory as the company has no plans to produce hinged handcuffs at present.

- 1. Surely a rare example of prisoner comfort being a major factor in the specification for restraints!
- 2. See the note about a keyhole protector in the Keys section of the Miscellany chapter.

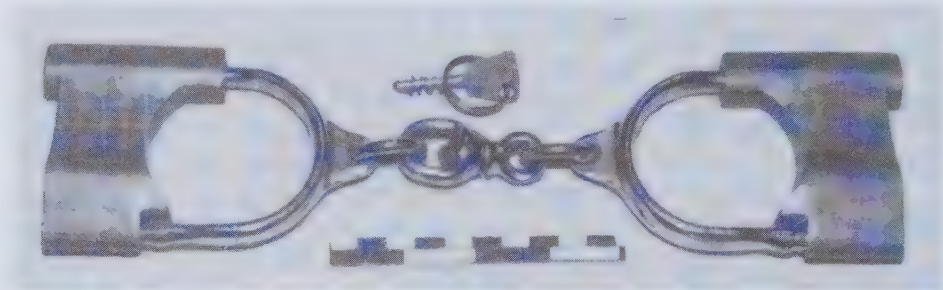


Figure 1. First pattern "Escort" model (Chris Gower Collection).

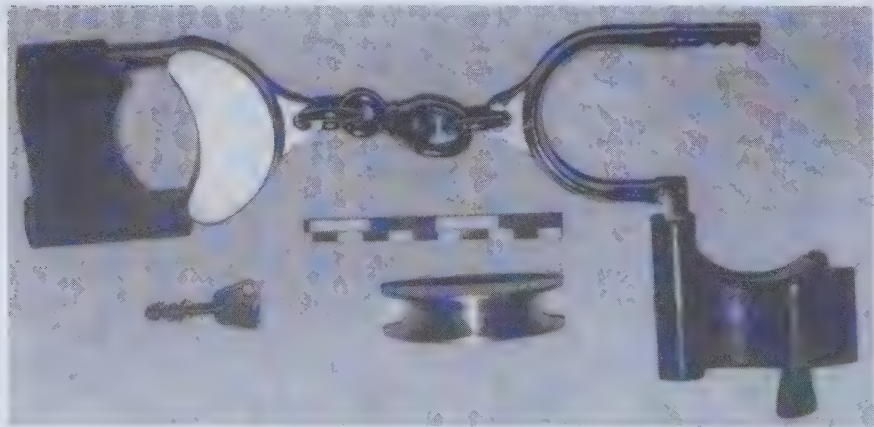


Figure 2. Second pattern "Escort" model, with first type of insert (Chris Gower Collection).



Figure 3. Second pattern "Escort" model, with second type of insert, unmarked.



Figure 4. Company name on base of lock case.



Figure 5. Company name on top of lock case.



Figure 6. Sizes 1, 2 & 3 of later version of second type of insert.



Figure 7. Model 1K70 "Detainer" handcuffs, with leather belt pouch.

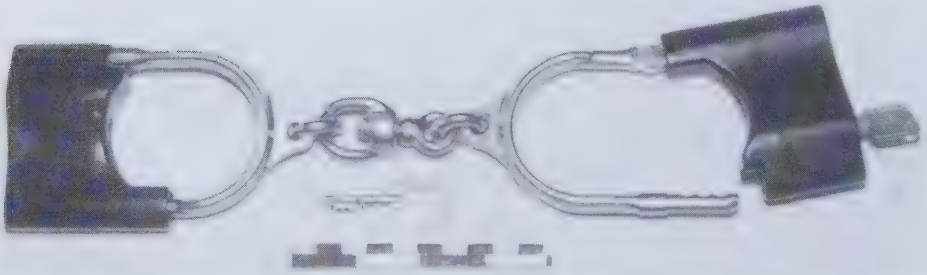


Figure 8. Latest version "Escort" handcuffs (this pair was made in February 2002 - the finish of the nickel plating is not so glossy as earlier versions, but is not quite "satin" finish).

8. LaTROBE HANDCUFF CO.

At one time the Hiatt company was owned by Harry LaTrobe and his son Peter was for a few years technical director.¹ When Hiatt's were sold to the present owner the LaTrobés left the firm.² Peter LaTrobe set up his own company in North Wales in 1983 to sell a new handcuff which he had invented. The first pattern, called the Escort handcuff, came out in 1984 and has a polished finish (Fig.1). The push button double locking mechanism is unusual. Before the double lock can be undone, it is necessary to pull the shackles as if to stretch the linkage. The linkage is connected to the lock case by a spring loaded mechanism which must be withdrawn before the double lock can be undone. The double locking button was causing some problems, so after the first few hundred pairs, 1,500 had a piece of black plastic "super-glued" in by hand to guard it (Fig.2). Later the lock case was redesigned to provide a metal guard and also finished in black (Fig.3). In 1992 an anti shim device was added between the locking pawls and then a little later the metal in the cheek plates was thickened.³

In 1988 the firm TOYE, KENNING & SPENCER, which manufactures police uniforms and equipment, entered into a contract with the company for handcuffs to be supplied marked TKS instead of LTH. When the company went bankrupt in 1991, Toye, Kenning & Spencer bought up the firm's assets and continued the sale of the handcuffs under their own name as the Type E Patrol model (Fig.4). The handcuffs are still made for them by an engineering firm in North Wales. LTH handcuffs were sold in the period 1984– 1991 and TKS from 1988 onwards. Serial numbers start at 006319. LTH also made a neat little universal key designed to open all contemporary British swinging bow models.⁴

1. He designed Hiatt's "1980" and first "Snap-on" models.
2. Shortly before then, Harry LaTrobe and his wife Mary were divorced and she remarried. She and her new husband set up a company to sell police equipment, H.P.P. , see later entry.
3. The thickening was claimed to be from 2mm to 3mm but polishing reduced that to nearer 2.5mm so that overall the lock case is a little over 1mm thicker.
4. See the section on Keys in the Miscellany II chapter.



Figure 1. First pattern "Escort" model, with original box (the double lock buttons are visible at the bottom of the lock cases).



Figure 2. Plastic double lock guards (the buttons have been pushed in) (Peter McCahon Collection).



Figure 3. Second pattern "Escort" model (the double lock button and guard are just discernable on the top of the lock cases).



Figure 4. T.K.S. Type E "Patrol" model (the double lock button and guard can be seen on the top of the lock case).

9. CIVIL DEFENCE SUPPLY.

This company was created in 1978 to manufacture and supply security equipment amongst other things to the police, military and security forces. Eran Bauer, one of the founders of the firm, told the author that it first produced “Quik-Kuf” handcuffs in 1995. It subcontracted the manufacture of the rigid handcuffs to an engineering firm near London. The plastic handle invented by Dennis Elam¹ was imported from the United States of America and fitted to the handcuffs by Civil Defence Supply. The handcuffs come in three finishes, polished chrome (Fig.1), satin nickel and black oxide (Fig.2).² The earliest models were only marked with the Quik-Kuf logo and a serial number, later ones have the metal parts marked to indicate that they are made in England. Until 2001 the plastic handles were marked to show that they were made in the U.S.A..

In 1997 the firm brought out its own handcuffs, manufacturing 3,000 pairs (Fig.3). These were developed from the metal parts of the “Quik-Kuf” by removing most of the solid bar joining the shackles and fitting a very neat little swivel. This swivel is small enough to fit inside most security boxes. These handcuffs are marked with the C.D.S. trade mark and are only supplied in polished nickel finish.

Early in 2001 a change was made to the plastic handle of the “Quik-Kuf” making it neater and symmetrical with better access to the keyholes (Fig.4). It is marked CIVIL DEFENCE SUPPLY and with the firm’s web site address, probably the first time that this has been done on handcuffs. The new handle is British made and the handcuffs are still made by the same London engineering firm. The handcuffs are marked with the “Quik-Kuf” logo as well as the MADE IN ENGLAND mark.

1. This handle was patented by Elam in the U.S.A. in 1989 and in Britain in 1993. In 1992 this handle was supplied fitted to Hiatt’s 2010 handcuffs, see the entry above for that firm and also the entry for Quik-Kuf in the U.S.A. section of this chapter.
2. Another ten pairs were finished in gold plate, one of which is owned by the author.



Figure 1. First model “Quik-Kuff”, polished chrome finish, showing keyhole side of handle.



Figure 2. First model "Quik-Kuff", black oxide finish, showing other side of handle.



Figure 3. CDS handcuffs (always supplied with a Quik-Kuff key).



Figure 4. Second model "Quik-Kuff" (note the symmetrical handle).

10. STEDALL & SONS.

This company seems to have specialised in the manufacture of cap wrist locks, gang chains and end locks and were the major suppliers of such items to the British Prison Service. The Prison Service Museum at Newbold Revell has hundreds of cap wrist locks in its collection, the majority of which were made by Stedall's. Two older Prison Officers told the author that it was common practice to use cap wrist locks as handcuffs by putting one on each wrist of a prisoner and then joining them with an end lock. This practice ceased when the Chubb Escort became the Prison Service's handcuff of choice.

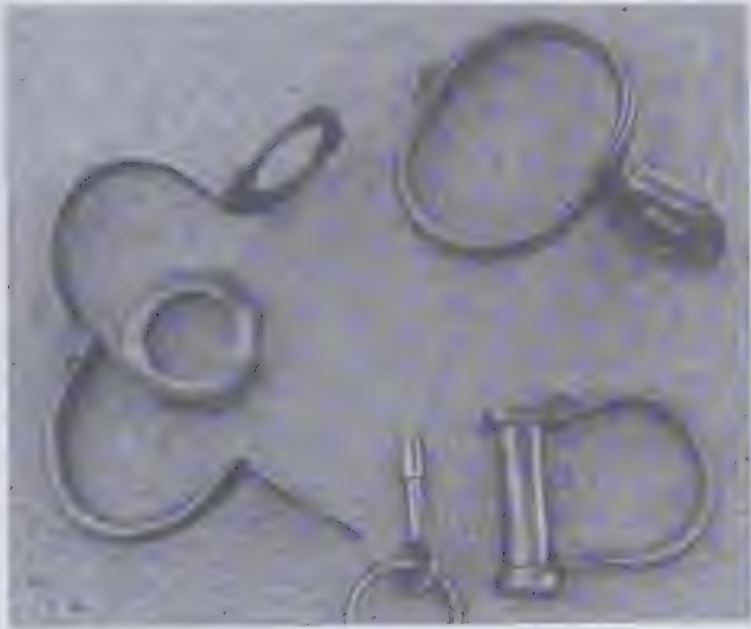


Figure 1. Two cap wrist locks and an end lock.



Figure 2. Two cap wrist locks connected by an end lock for handcuff usage.

This Birmingham firm still exists and is now trading as Acme Whistles. It was founded in 1870. The 1906 advertisement (Fig.1) shows that it marketed a wide range of police equipment, including handcuffs and grips. It made restraints in its own foundry and also sold the French “La Massenotte” and Hiatt “Scotland Yard” pattern handcuffs.¹ At one time it even made handcuffs **for** Hiatt, probably an arrangement to help out when that firm had more orders than it could cope with.² The firm also made handcuffs and grips for Dowler³ after that firm ceased production in its own factory circa 1901 (see previous entry). It ceased making handcuffs in the mid to late 1930’s.

In about 1920 the company manufactured a hinged swinging bow handcuff which was known within the firm as the “German pattern ratchet handcuff” (Fig.2a & 2b). This is made of brass, but with a steel jaw and is nickel plated. This must be the earliest hinged swing-through swinging bow handcuff in production anywhere and the design is much better than the German pattern swing-beside type (Schützmarke or earlier). It was listed as still available in the firm’s 1942 records.⁴ The company records seem to indicate that at least 10,000 pairs were made. A normal chain link version was also made. The company never put any marks on its handcuffs.

It is thought that a major proportion of the handcuffs made by Hudson’s were exported, some to France but more to Germany. The company records show much correspondence over the period 1920 – 1934 concerning purchases by August Schwarz of Hudson products. The correspondence became increasingly acrimonious in the 1930’s as Hudson’s sought to prevent Schwarz from manufacturing copies of their products, to the point of threatening legal action.

The third pattern Schwarz handcuffs are of a swing-through type and have a hinge assembly which closely resembles the Hudson type⁵. This and the correspondence noted previously may indicate that his design is a copy of the Hudson model.

It may well be that the Hudson company manufactured the world’s first hinged handcuff of any kind.

1. The “Scotland Yard” pattern handcuff offered uses the identical illustration to the one in the Hiatt catalogue.
2. There must have been some reciprocal arrangements, because the contemporary Hiatt catalogue shows that firm offered a range of Acme whistles.
3. The author has seen the range of stamping tools at Hudson’s factory which includes those of Hiatt and Dowler.
4. Fortunately, this firm was not bombed during World War II and so it still has many of its old stock records.
5. See the illustration in Tom Gross’s *Manacles of the World*.

J. HUDSON & CO.,
 Registered Trade Marks
 "The Lion," "The Metropolitan," "The Thunder."
WHISTLE MANUFACTURERS,

For Police, Tramways, Roadways, Railways, Cyclists, Firemen, etc. Also Leds in Brass, German Silver and Silver Plated to any Pattern. General Stampers, Piercers, and Metal Workers. Contractors to the London Commissioners and H.M. Home and Indian Departments. The War Office. The India Office. The Admiralty. South African Constabulary and all the leading Police Forces. Railways and Tramways at home and abroad. And the Metropolitan Royal Household. Sole Makers and Patentees of the "Metropolitan," "Lion Brand," "Thunder," and the "City Police" Whistles.

Exporters: Messengers, Buttons, Button Sticks, Fingers & Spindles, ARM, AMBULANCE BADGES FOR POLICE FORCES, Fire Engines, and other Badges. See Cat. for details. For Sale and Hire: Whistles, "Lion Brand," and "Thunder" in every quantity.

BADGES FOR DRIVERS AND CONDUCTORS, NO. 1 LABELS AND BADGES, in a variety of patterns, such as Metropolitan Buses, Fire, and in Frames, all of considerable number. See Catalogue for details.

PRICE LISTS IN ENGLISH AND FRENCH ON APPLICATION.

The Metropolitan Whistle & Brassfoundry Works, 11 & 13, BARR ST., BIRMINGHAM, ENGLAND.

Figure 1. Advertisement of 1906.

133



Figure 2a. Drawing from the company stock record, dated 1923.

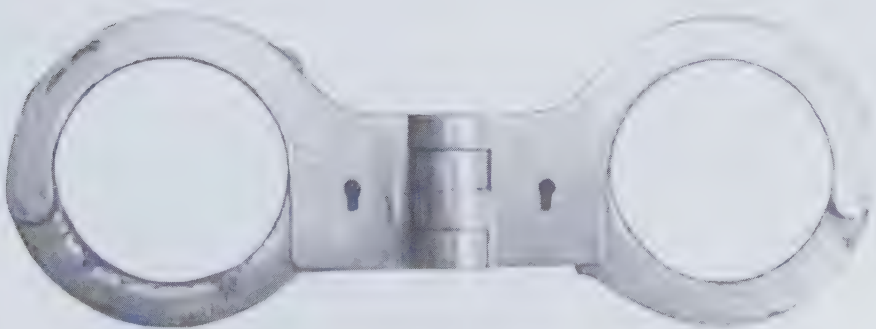


Figure 2b. Hinged handcuffs (Michael Busch Collection).⁶

- 12. T.H.& CO
- 13. W.D.& S.
- 14. REYNOLDS.

The only thing the author knows about these three firms is that a Nottingham collector owned handcuffs marked with their names. The illustrations are drawings from a catalogue produced in connection with the sale of that collection. Chris Gower saw the items, but they were in very poor condition.



Figure 1. Eights model handcuffs.



Figure 2. Standard darbies



Figure 3. Standard darbies.

15. S.M.CO.

This firm was situated in the south-west of England, rather than the Birmingham area, where most handcuff manufacturers were located. There is a record of the purchase of handcuffs “from a local firm” by Dorchester Prison authorities and a considerable number of this company’s handcuffs are identified as being of that batch. The company also made solid state handcuffs of both the plug eight (Fig.1) and Irish eight types. Handcuffs frequently turn up bearing the government arrow mark and the date 1916 (Fig.2),’ so it seems likely that this firm was well established by the time of the World War I, but it probably went out of business before World War II.

1. And also the letters M & C, see the Hiatt section earlier for comments about this mark.



Figure 1. “Boer War” pattern eights handcuffs (marked 1917) (Chris Gower Collection).



Figure 2. Standard handcuffs.

A manufacturer of standard darbies (Fig.1) and eights pattern (Fig.2) handcuffs, another of the many firms of probably late Victorian to early twentieth century times.



Figure 1. Standard darbies (Chris Gower Collection).

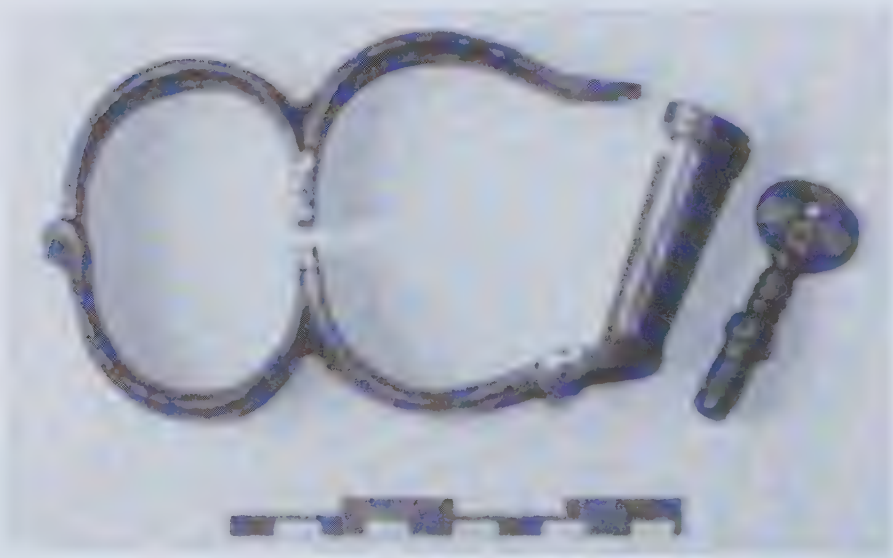


Figure 2. Eights pattern handcuffs (Chris Gower Collection).

17. J.G.

The author has a pair of heavyweight handcuffs (Fig.1), boldly marked JG and closely resembling those produced by Reuben Craddock & Son in the 1940's. It is possible that this firm only produced one batch of handcuffs to meet the anticipated wartime demand.

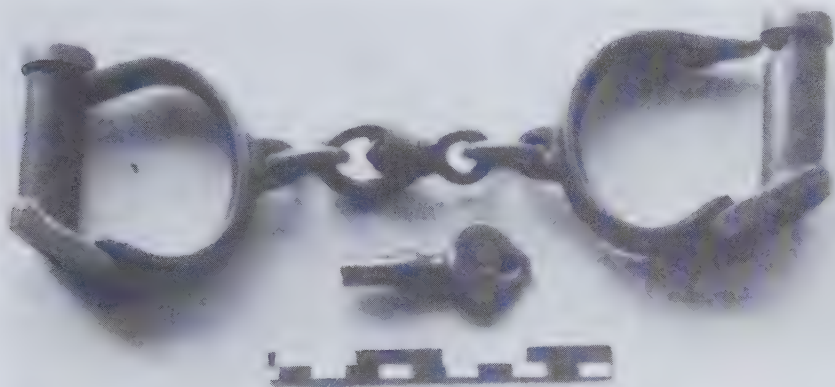


Figure 1. Heavyweight darbies.

18. M.C.I.

A pair of handcuffs made by this firm bears the date 1942 (Fig.1). Nothing else is known to the author. It too may well be a company contracted solely to supply handcuffs to meet the wartime demand.



Figure 1. Standard darbies (Chris Gower Collection).

19. W.R.PAPE.

It seems likely that this company only produced grips¹.

1. See the Grips & Related Items chapter.

20. THEWLIS & GRIFFITH.

The implication of the advertisement figured is that this firm specialised in the manufacture of grips,¹ but also made handcuffs.

1. See the Grips & Related Items chapter.



Figure 1. Thewlis & Griffith advertisement of about 1900 (note “other handcuff manufacturers”).

21. WILSON.

A pair of this firm’s plug eight handcuffs (Fig.1) is owned by Blaise Castle House Museum in Bristol. These are very much like those produced by several manufacturers in Victorian times.



Figure 1. Plug eight handcuffs (Blaise Castle House Museum, Bristol).

22. C[/]ROFT. (CALCROFT?)

Blaise Castle House Museum in Bristol displays a pair of handcuffs (Fig.1) whose markings are partially obliterated by wear, so the name Calcroft is conjectural. The handcuffs are marked 12 and the key 3. The old museum catalogue card states "Formerly used against poachers by Mr. Strong, a gamekeeper employed by the Harfords at the Blaise Castle Estate ... probably c.1900".



Figure 1. Standard darbies (Blaise Castle House Museum, Bristol).

23. FITZWILLIAM & SON MANUFACTURING.

This company seems to have started trading early in the nineteenth century and may well have gone out of business before the century ended. The illustration shows a plug lock handcuff, marked F.W.S.M. which is described as early 1800's.

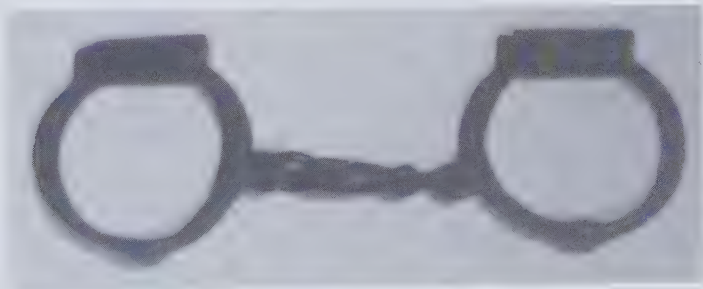


Figure 1. Plug lock handcuffs (Jon Oliver Collection).

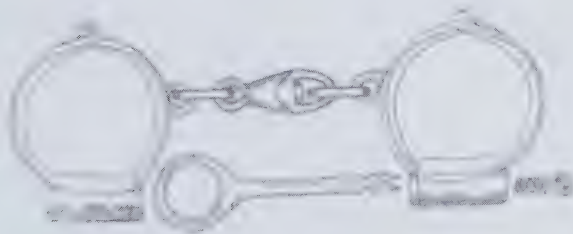


Figure 2. Handcuffs drawing (Jon Oliver).

24. BAKER.

This firm is listed by Tom Gross¹ as British, but it is unknown to the author. Chris Gower has a record of the possession by another collector of a plug-8 handcuff marked with this firm's name, which was offered for sale some years ago.

1. See *Manacles of the World*.

25. H.P.P. (HIATT POLICE PRODUCTS)¹.

This firm sells TROJAN brand handcuffs. These were at first imported from Taiwan (Fig.1), but are now supplied by the Spanish firm LARRAÑAGA Y ELORZA (which see) and are identical to that firm's current standard Peerless model.

1. See footnote 2 in the section on LaTrobe handcuffs.



Figure 1. "Trojan" Taiwanese model handcuffs with original box (main colour brown).

26. GRIFFIN.

This is another nineteenth century firm¹, generally making restraints much the same as their contemporaries, including plug lock types (Fig.2). However, they produced one most unusual model, an "solid state" type (Fig.1), which slightly resembles the famous "Bean Giant" handcuff of the United States of America. It differs from that handcuff in that the two shackles close on the same side into the central rectangular lock case and it is not adjustable for size.

GRIFFIN appears to have had links with both HIATT and NICHOLS, handcuffs marked HIATT & GRIFFIN and GRIFFIN & NICHOLS (Figs.3 & 4) are known. Perhaps some arrangements were made similar to that noted in the entry for HUDSON above. The GRIFFIN & NICHOLS chain link handcuff figured is most unusual in that the swivel is attached directly to the shackles without intervening rings.

1. It is possible that this is the Birmingham company Griffin Foundry, which was well established by 1856 and still operating in 1936. It manufactured lawn mowers, fireplaces, grates and ranges.



Figure 1. Solid state handcuffs (York Castle Museum).



Figure 2. Heavyweight plug lock leg-irons (Chris Gower Collection).



Figure 3. Standard darbies (marked GRIFFIN & NICHOLS).



Figure 4. Plug eight handcuffs (marked GRIFFIN & NICHOLS) (Chris Gower Collection).

27. GIDNEY DEREHAM.

This mark on a pair of handcuffs (Fig.1) in the Chris Gower collection may indicate a firm named Gidney operating in Dereham in Suffolk.

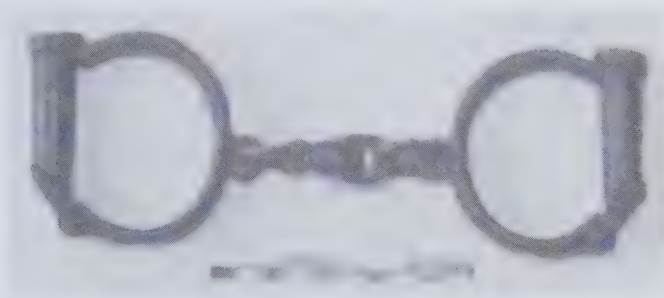


Figure 1. Standard darbies (Chris Gower Collection).

28. THOMPSON.

Some collectors are of the opinion that this is an U.S.A. company, but that is certainly not true. Thompson handcuffs turn up regularly in Britain and it is unlikely that they would have been imported from the U.S.A. Trade the other way was much more likely in the late nineteenth century. The firm, based in Birmingham, is listed in Kelly's 1880 trade directory, but had probably been in existence for some time by then. It advertised itself as a "manufacturer of bull rings, handcuffs (Fig.1), leg-irons, horse hobbles, dutch padlocks and dog collars etc." It seems to have ceased production during or shortly after World War I.



Figure 1. Standard darbies.

29. T & A LONGMORE.

The Morris & Co. Commercial Directory of 1866 lists this Birmingham company as a handcuff manufacturer, but the author has no knowledge of any examples of their products.

30. JONES.

A firm called James Jones is listed as a handcuff manufacturer in several Kelly's Trade Directories in Birmingham c 1880. Like the previous firm, no examples are known to the author.

31. B.S.Ltd.

It is not known when this firm operated but there is at least one known example of its handcuffs (Fig.1).

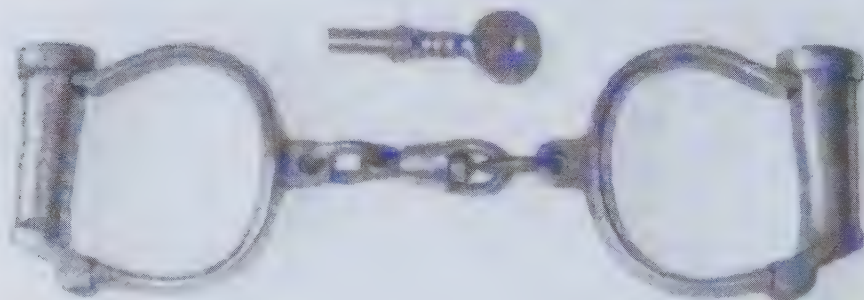


Figure 1. Standard darbies (John Ireland Collection)

32. J.TURNER.

This firm is listed as a handcuff maker in Wolverhampton trade directories in 1839-78, but no examples of its handcuffs are known to the author.¹

1. See the mention of an item made by W.Turner in the Grips and Related Items chapter below.

33. UNKNOWN MAKERS.

The items illustrated here have no makers' markings, but are thought to be British. The first item, a pair of leg-irons (Fig.1), is most unusual in having a kind of double hinge opening mechanism and appears to have been adapted from a pair of ordinary darby handcuffs, judging by the size of the lock case. The second item is a pair of unusually large and heavy handcuffs (Fig.2) with a single ring linkage. The unmarked "plug eight" handcuff (Fig.3) is unusual in that it has an additional bar, probably for threading onto a belt as shown. The early nineteenth century plug leg-irons shown (Fig.4) are massive, weighing more than 10 kilos (20lbs) and large enough to be fitted over work boots. Lastly, an interesting plug lock combination set of one handcuff and one leg-iron (Fig.5).



Figure 1. Double hinged leg-irons (Chris Gower Collection).



Figure 2. Heavyweight large darbies (Chris Gower Collection).



Figure 3. Plug eight handcuffs with side bar (Chris Gower Collection).

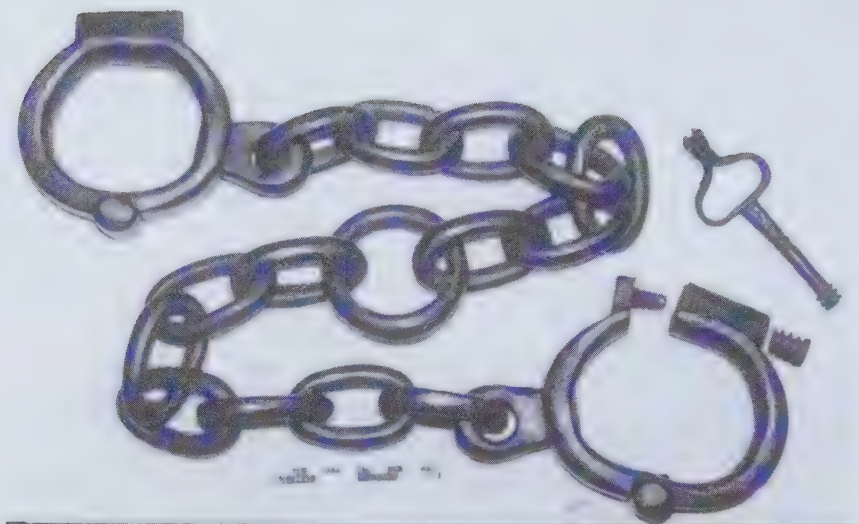


Figure 4. Heavyweight plug lock leg-irons (West Midlands Police Museum, Birmingham).

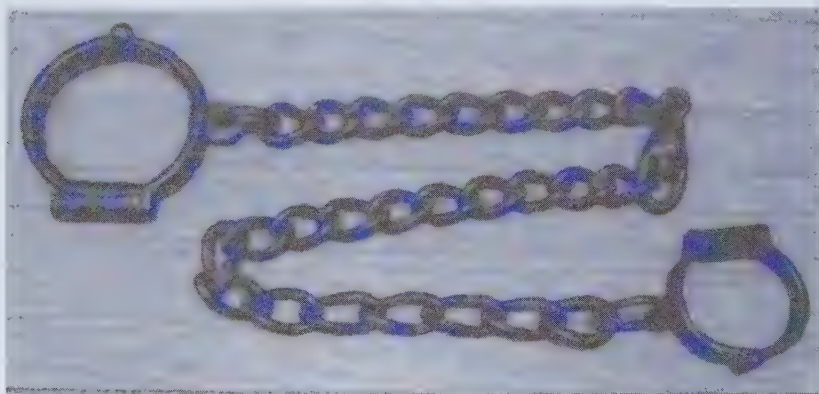


Figure 5. Plug lock single handcuff and leg-iron combination set (Warrington Police Museum, Cheshire).

B. EUROPE.

(a) BELGIUM.

1. FN-HERSTAL.

Fabrique Nationale is a Belgian company connected to the Browning Arms Co., one of the many manufacturers of firearms in Europe and the United States of America who also make restraints. The handcuff "Modele Depose" made by this firm is probably unique, it is the only one known to the author which has a magnetic lock. Although it is a most interesting idea, it has not been very successful, which may explain why it has not been copied. The lock is opened by the insertion of a special magnetic key into the large round keyhole, but any suitable magnet will unlock it.¹ The lock case has only one complete cheek plate so that the bow swings beside, rather than through, the lock.

1. Chris Gower has a letter from the company dated April 25th 1983 which states "we are presently developing a new type...we have added a locking system by turning the magnet that increases the foolproof of the mechanism" (sic) The firm supplied him with a sample. It is not known how many of these improved models were made.



Figure 1. Standard handcuffs (the magnet key is painted bright red).

1. BREN s.r.o.

This company is best known for its manufacture of guns. It produces restraints under the brand names Pouta and Ralkem. The company seems to have commenced the production of restraints sometime fairly soon after World War II. The earliest models are not marked, but soon the mark RALK-SNB-53¹ appeared on handcuffs (Fig.1). Later models are marked with the Bren trademark. The terms Pouta and Ralkem seem only to have been applied to boxes² (Figs.2a & 2b) and advertisements.

The first pattern is a Peerless type (Fig.3) closely resembling the model being produced by the Spanish firm Larrañaga y Elorza (see below) at about the same time. These are single locking only. The second pattern has a larger lock case, giving a distinctively different shape to the handcuff (Fig.4). This pattern is available in hinged as well as chain linkage forms (Fig.5). The feature that distinguishes these handcuffs from the usual Peerless pattern is the lock. This is a little more complicated than the standard type and has a keyway accessible from both sides. The first double locking method is by pushing the elongated tip of the key into a slot on top of the lock case. This elongated tip is not present on the otherwise similar key to early models. Later models have a recessed push button and a slightly larger lock case, though the key supplied still has the elongated tip (Figs.6 & 7). The current models no longer have the Bren trademark, but have the Ralkem R symbol and are marked ALFA Proj and Made In Czech Republic (Fig.8).

The firm produces leg-irons, similar to the handcuffs but with dimensions such that the shackle will fit a larger range of sizes than usual, the largest setting easily going over a boot (Fig.9). The linkage chain is shorter than usual, so that a prisoner wearing these leg-irons will have difficulty negotiating steps.

A transport belt is also available,³ which is supplied with a pair of the hinged model handcuffs, though it can be used with almost any handcuffs. A “conveying” handcuff is also made (Fig.10). This is a single shackle of the first model of the second pattern, attached to a chain 10 inches (25cm) long with a ring at the end. This can be used as a transport aid, with the ring put on one shackle of the prisoner’s handcuffs, or as a security device when fastened with a padlock to a carried case such as a small suit/briefcase.

1. The 53 seems to refer to the date 1953 when the model was introduced.

2. Surprisingly, the box supplied with the latest handcuff models simply bears the legend HANDCUFFS in English.

3. See the Belts and Strap Restraints chapter later.

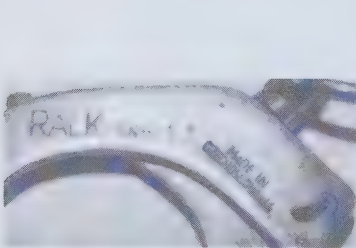


Figure 1. Early “Ralk” trade mark (Chris Gower Collection).



Figure 2a. Pouta box.



Figure 2b. Ralkem box.

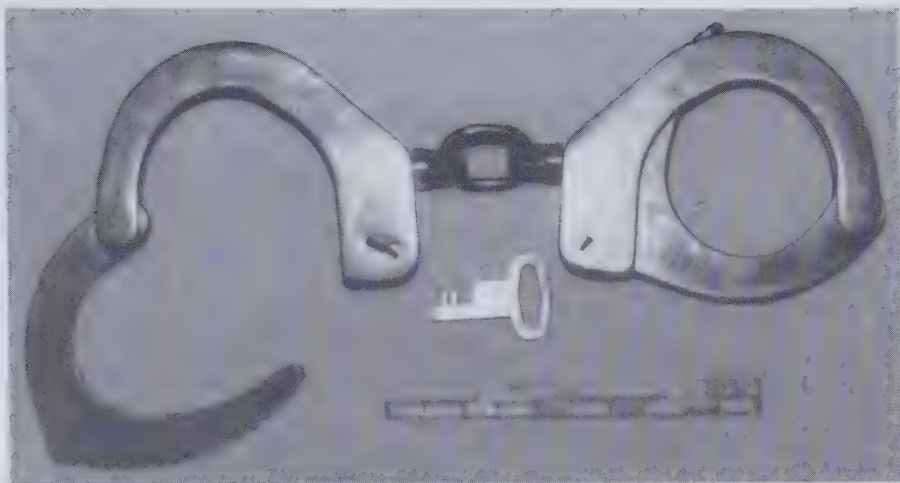


Figure 3. First pattern handcuffs (Peter McCahon Collection).



Figure 4. Second pattern, model 9921 handcuffs, chain linkage.



Figure 5. Second pattern, model 9922 handcuffs, hinged linkage.



Figure 6. Second pattern, model 9924 handcuffs, chain linkage (Chris Gower Collection).



Figure 7. Model 9925 handcuff, hinged linkage (the double lock button is in the semi-circular notch at the bottom of the lock case).



Figure 8. Current Ralkem trade mark.



Figure 9. Model 9927 leg-irons (push button double lock)



Figure 10. Conveying shackle.

(c) FINLAND.

There were two manufacturers of handcuffs in Finland and none have been made there since World War II. However, it is interesting to note that two of the world's most famous handcuffs, the Chubb "Escort" and the "H & R Super" are Finnish inventions.

1. ABLOY.

This company produced a small batch of high security brass handcuffs in the 1930's (Fig.1). It also patented the design which the British company Chubb manufactured under licence as the "Escort" handcuffs.

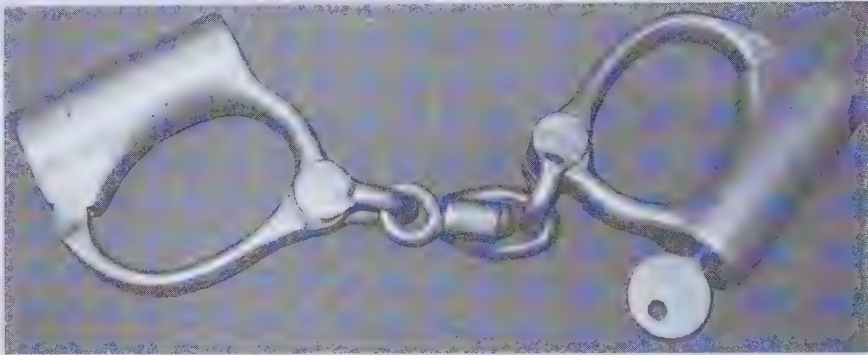


Figure 1. High security model handcuffs (Abloy Company Museum Photograph).

2. KONEPAJA VOIMA.

The handcuff bearing this brand name was patented in 1928 and is similar to the handcuff produced by the Harrington & Richardson company in the United States of America (see later entry), but of slightly more smoothly rounded construction. The key hole is hidden in the linkage, so that at first sight these handcuffs do not appear to have one. A clockwise turn of the key unlocks and an anti-clockwise turn double locks the handcuff. There is said to be a non-swinging bow version, rather like the Hiatt "C range" type.



Figure 1. Standard handcuff (Hiatts Collection, Birmingham).

(d) FRANCE.

After Britain and Germany, France is Europe's next largest producer of restraints, in terms of number of manufacturers. The makers of many of the items that turn up are not known and these are listed by the titles that seem to have been found most useful for identification by collectors in recent years.

1. RIVOLIER.

This company calls itself the first French handcuff company in its English advertising, but this probably means that it claims to be the leading company! That claim is almost certainly true, its products are the ones most likely to turn up, but it is certainly not the case that there were no earlier manufacturers. The company was founded in 1947 and its earliest products were simple Peerless type handcuffs having a distinctive oval "eggplant" shape, which holds the hands with the palms facing downwards when applied in front. The first double locking device has a series of holes, usually five, in the lock case and jaw, through which a padlock can be put (Figs.1&2). Later models have double locking by means of a tumbler lock, requiring a separate key to undo (Fig.3). A standard non-double locking handcuff is also available (Fig.4). A training handcuff is produced, which has no key.¹ Also available is a three shackle handcuff set, the third shackle joined to the handcuffs by means of a short chain.

The company brought out its leg-iron in the early 1980's and this is an extraordinary model. It has a single size only and the lock is very primitive, consisting of a simple screw bolt, rather like a simplified version of that in old plug locks (Fig.4). Another product is the "chaîne de conduit", a simple chain, about 80cm long, having a small ring at each end and covered in blue nylon fabric (Fig.5). If the chain is threaded back on itself through an end ring, a loop is formed through which handcuffs can be put. This can then operate as a lead chain, or a similar procedure can be used to attach leg-irons for a transport set (Fig.6).

1. See the Training Aids section in the Miscellany II chapter.



Figure 1. Early pattern handcuff, single ring linkage, showing double locking holes (Chris Gower Collection).



Figure 2 Early pattern handcuff, long linkage chain, with padlock double locking (Chris Gower Collection)



Figure 3. First pattern high security handcuff (note second key required for double locking).



Figure 3a. Second pattern high security handcuffs (note the rounded jaws) (Chris Gower Collection)



Figure 4. Standard handcuffs and leg-irons.

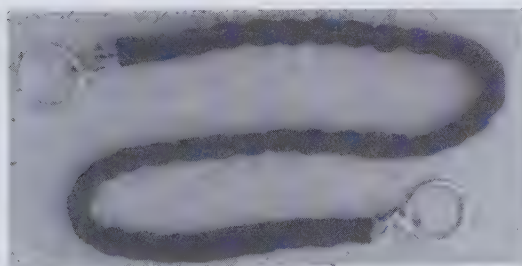


Figure 5. "Chaine de Conduit".



Figure 6. "Chaine de Conduit" in use as a connector between handcuffs and leg-irons.

2. G.K.

The handcuffs produced by this company closely resemble the type brought out by the Manurhin company (see below). They also produce a training handcuff.¹ The double locking version needs two keys to operate.

1. See the Training Aids section in the Miscellany II chapter.



Figure 1. High security model handcuff (Yossie Silverman Collection)

3. LA PEGY.

Only one handcuff model seems to have been produced by this company, probably in the 1960's. It is a lightweight type, with an aluminium lock case. It uses a flat key and has no double locking facility. The linkage is quite simple and resembles the German Kayser Peerless types.

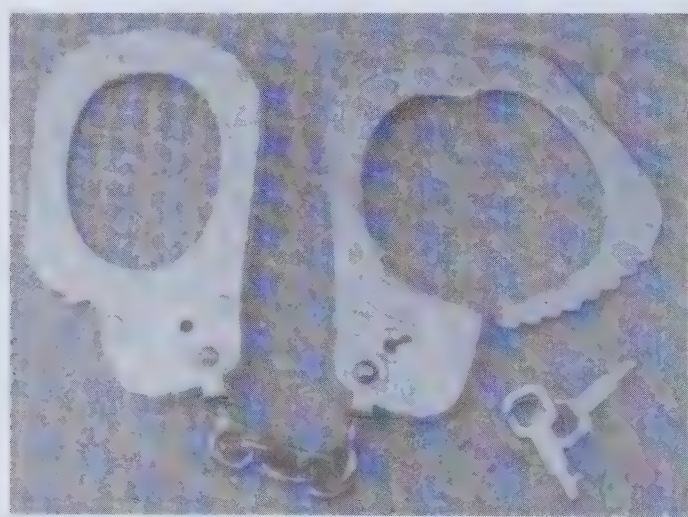


Figure 1. Standard handcuffs.

4. MÉTAL-CHAINEX.

This firm made handcuffs under the brand name LA MASSENOTTE¹ and seems to have started production around 1920.² These handcuffs look rather like a cross between Rivolier and the German Clejuso models (Figs.1 & 2). They generally use a flat key, but some models use one like a standard Peerless key (Fig.3). Four standard models were made, single locking with either a short or a long chain linkage and double locking with either chain linkage. A four shackle gang chain was also made (Fig.4).

1. Some have translated this as the French word for handcuff, but that is menottes.

2. The British firm Hudson offered La Massenotte handcuffs in its 1923 catalogue.



Figure 1. Short chain linkage model handcuffs, flat key type (Chris Gower Collection).



Figure 2. Long chain linkage model handcuffs, flat key type (Chris Gower Collection).



Figure 3. Long chain linkage model handcuffs, round key (Chris Gower Collection).



Figure 4. Four shackle gang chain, round key type (Chris Gower Collection)

5. MANURHIN.

This company is a gun manufacturer and in the 1980's it produced a high security handcuff. At one time the British firm Hiatt offered this handcuff for sale as its model "Matra 85/88" and were going to make it under licence. The plan came to nothing and the handcuff seems not to have appeared in any other guise. The handcuff is well made and has a double locking system very much like that used by Riolier with its high security models.



Figure 1. Standard handcuffs.

6. UNKNOWN MAKERS.

Several types of handcuff turn up, quite often described as Moroccan, typically "egg-plant" shaped, but with a generally more rounded shape than the Riolier models. They also usually have a flat key, relatively simple linkage chains and no double locking facility.



Figure 1. Unknown maker handcuffs (Chris Gower Collection).

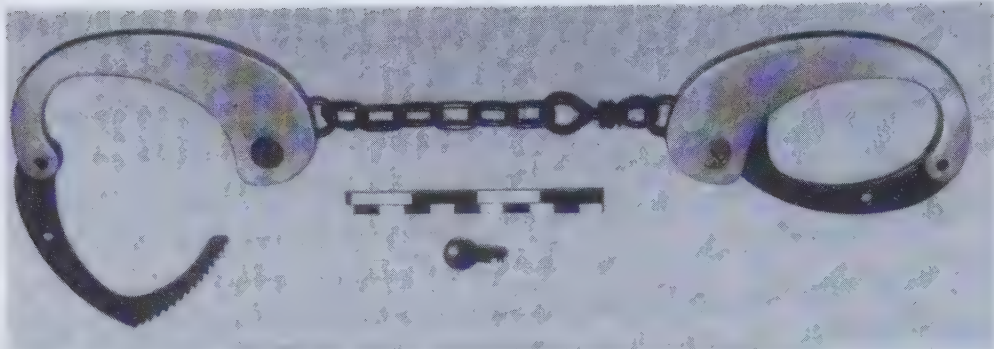


Figure 2. Unknown maker long chain linkage handcuffs (note the unusual swivel arrangement)
(Chris Gower Collection).

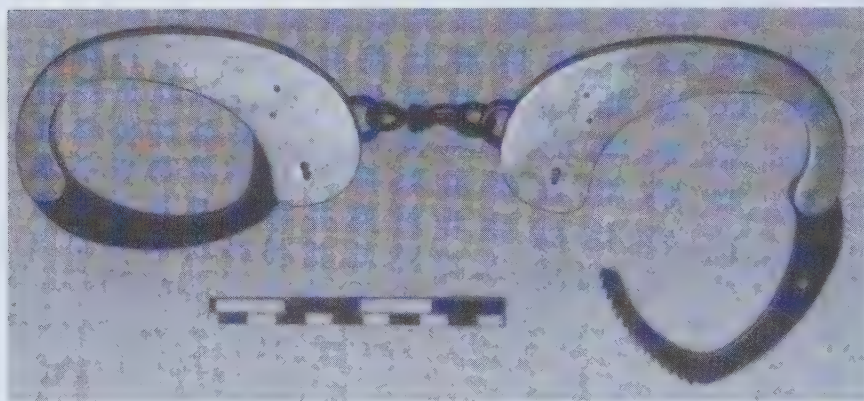


Figure 3. Unknown maker handcuffs (Chris Gower Collection).

The major problem with German manufacturers is that, like Hiatt in Britain, most seem to have suffered the loss of their records during World War II. There are some fairly well authenticated old items around, most of whose manufacturers are unknown and these are noted in the Miscellaneous Makers entry of this section.

1. CLEMEN & JUNG.

This company is based in Solingen and uses that name with its own to produce the brand name CLEJUSO. It has been in existence since 1860 and is the leading German manufacturer. The earliest products are typical darbies resembling Hiatt's "Scotland Yard" pattern (Fig. 1a & 1b).¹ The leg-iron version (Fig. 2) of these restraints survived until the 1970's, when it was replaced by the current model.

The first pattern swinging bow handcuff may have been introduced as early as 1920, certainly by the mid 1930's and continued in production until the 1970's. It is the oval shaped shackle of the kind favoured on the continent which holds the hands flat when in front of the body, with the palms facing downwards rather than each other. In its first form, it is a rather slim handcuff with the lock case puffed out around the keyhole to accommodate the key. This version was followed by the commoner thicker bodied form, probably in the early 1940's (Fig. 3). This model is also found in a double weight form, made by welding together two of each part of the shackles. Double locking in the later versions is with the key via the keyhole.

The second, current, swinging bow model handcuff came out in the 1970's and is more like the usual Peerless type, though with a slightly larger key. Double locking is by a push button on the side of the lock case, proud at first (Fig. 4), but recessed later. Two sizes are produced, standard model 11 and a large model 11A (Fig. 5). A stainless steel version of the larger size is model 12A. A hinged version, in stainless steel, model 19R is also made (Fig. 6).

A third type of swinging bow handcuff was first produced around 1980 and is of a much sturdier construction. It is made in two weights, medium, model 13, at 1.0 kilogram (Fig. 7) and heavy, model 15, at 1.3 kilograms (nearly three pounds) (Fig. 8). These are quite the heaviest manacles made anywhere nowadays and are clearly not designed for the policeman on the street to carry around! These have recessed push buttons for double locking.

The current model 8 leg-iron is not a swinging bow pattern, but has a locking mechanism vaguely reminiscent of the Bean types of the United States of America, but with a double locking push button on the top of the lock case (Fig. 9). These have two forms, with or without swivels in the linkage chain. Model 128M, a combination set of these with a pair of second pattern swinging bow handcuffs, connected by a fixed chain, is known as the "Hamburger" restraint.² (Fig. 10). Combination restraints of the older darby types are also found (Figs. 11 & 12). Gang chains, usually with five shackles attached as standard, have been offered since the darby pattern days (Figs. 13 & 14). Other combinations can be made up to order. Perhaps the most unusual item is model 17, a single shackle of the heaviest manacle, model 15, attached to a locking anchor (Fig. 15).

The company also at one time produced a chain handcuff, which consists of a length of chain fitted with two rings at strategic points. The whole can hold each wrist of a prisoner separately and then be locked with a padlock (Fig. 16a & 16b). Clejusó still makes the scissors and "wrist cracker" chain pattern grips.³

The year 2000 saw the introduction of the maximum security range of restraints: model 101 chain link (Fig.17) and model 102 hinged (Fig.18) handcuffs and model 103 (Fig.19) leg-irons. The shape has reverted to the squared oval of the first Peerless model, but the lock has a much more secure tumbler action. The lock case is marked to show the locking position, a forty-five degree turn toward the linkage unlocks and a similar turn away operates the double lock. Both pairs of handcuffs are large and heavy, not designed for street use, but the leg-irons are of roughly normal proportions. The other significant change is that the shackles have only one complete cheek plate, so that the bow swings beside rather than through the lock case.

1. There is a most interesting photograph of a pair of long chain handcuffs on p28 of Dick Wresch's book about the Houdini handcuffs etc. The swivel on these handcuffs looks very much like a typical Clejuso type. Prior to the first World War, the Japanese army was trained by German officers, so it would not be surprising for them to use German handcuffs, which could well have remained in use twenty four years later.
2. Hamburger means of or related to the city of Hamburg, Germany and has nothing to do with the well known fast food, though that also originated there!
3. See the chapter on Grips and Related Items.



Figure 1. Early barrel lock handcuffs (Clejuso brochure).

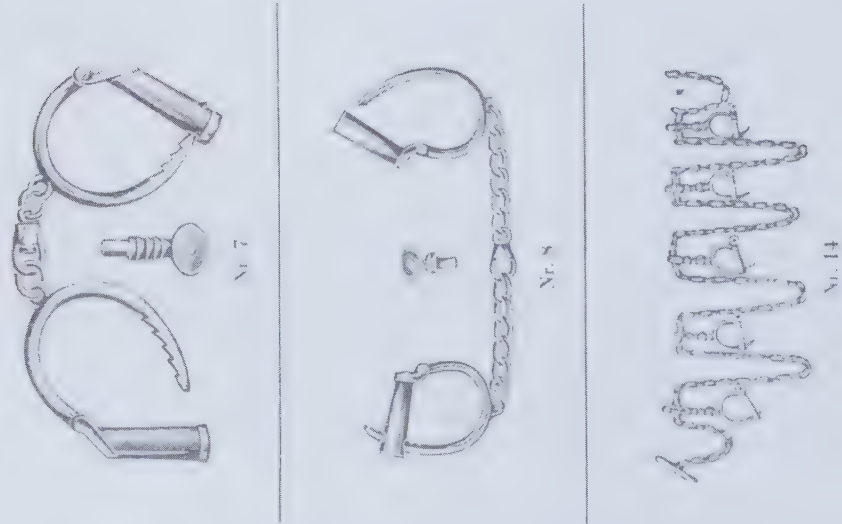


Figure 1a. Early Clejuso catalogue drawings.



Figure 2. Old model 8 leg-irons.



Figure 3. First pattern handcuffs (double lock with the key via the key hole).



Figure 4. Second pattern handcuffs (double lock push button just visible on top of lock case).



Figure 5. Model 11A handcuffs.



Figure 6. Model 19R handcuffs.



Figure 7. Model 13 medium weight handcuffs.



Figure 8. Model 15 heavyweight handcuffs.

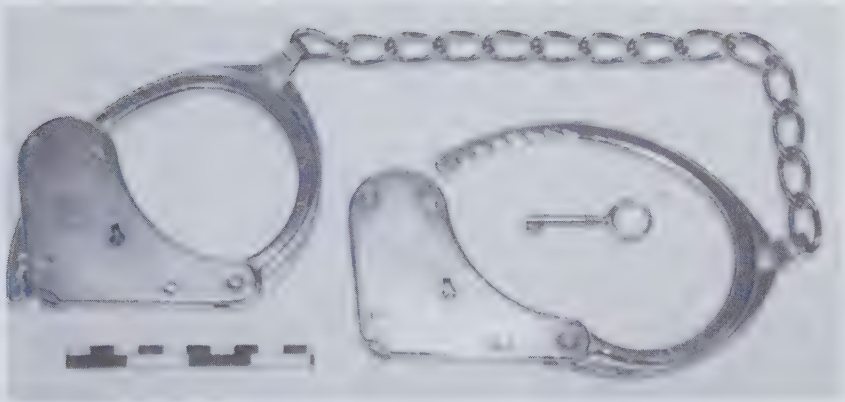


Figure 9. Current model 8 leg-irons.



Figure 10. Model 128M "Hamburger" set.



Figure 11. "Kombi" set, single connector chain (Chris Gower Collection).



Figure 12. "Kombi" set, double connector chain (Chris Gower Collection).



Figure 13. Model 14 gang chain with first pattern Peerless type handcuffs.



Figure 14. Current model 14 gang chain.

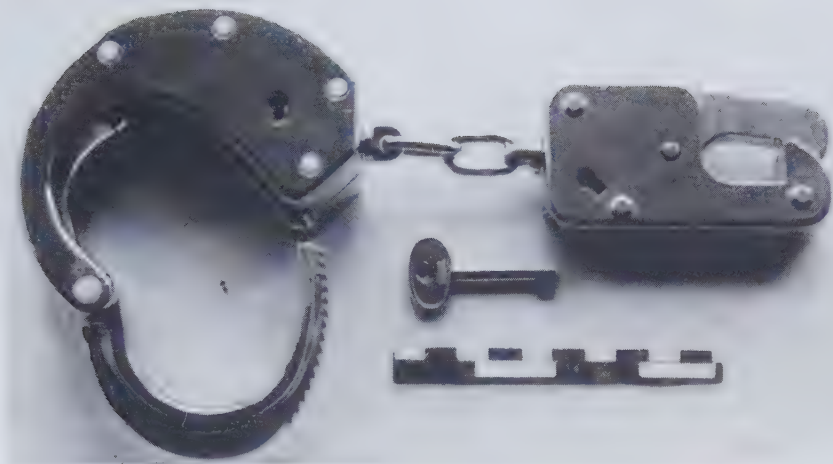


Figure 15. Model 17 single heavyweight shackle and anchor.



Figure 16a. Chain handcuffs (not original padlock).

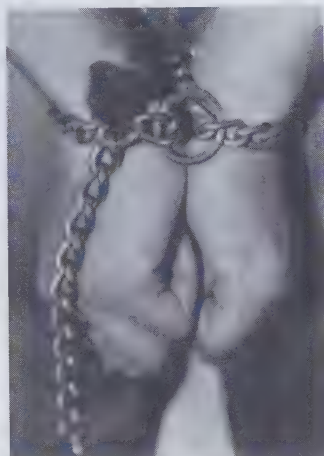


Figure 16b. Chain handcuff in use.



Figure 17. Model 101 chain linkage high security handcuffs.



Figure 18. Model 102 hinge linkage high security handcuffs in use.



Figure 19. Model 103 high security leg-irons.

2. A.W.NAHT.

This is a Hamburg firm which produces a handcuff almost identical to the first Clejuso swinging bow type, but of a slightly slimmer construction, though not as slim as the first form Clejuso. These are produced exclusively for the German armed forces and are always marked with the government mark BUND.¹ The major difference is the double locking mechanism, which is of a sliding button type similar to the Chubb Detainer handcuff and like that, needing the key to unlock via the keyhole.

1. This word has the same significance as the arrow mark on British items.

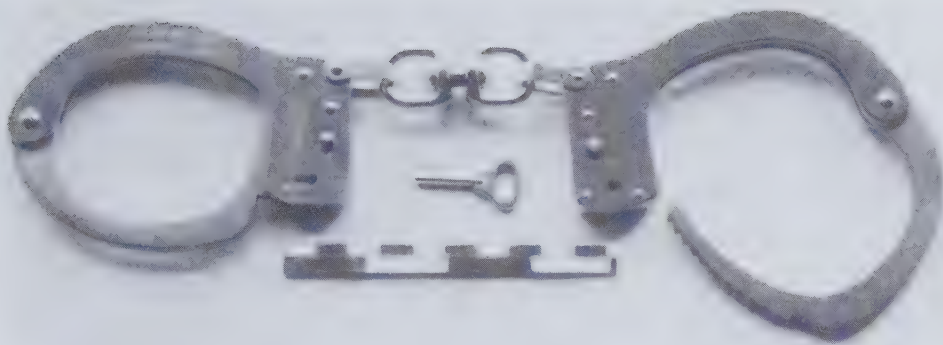


Figure 1. Standard handcuffs (note double lock push buttons immediately above the keyholes).

3. KAYSER.

It is possible that this company was producing darby type restraints well before World War I and these are much the same as those produced by their contemporaries (Figs.1&2). Probably the best known handcuff of this company, is their model 5, the "Hamburg Eight" (Fig.3). It is thought that this handcuff was first made before World War II and that production ceased in the 1960's. It is an ingenious design, and will not lock when folded flat, when it can be conveniently carried in the pocket. It has to be opened from the flat position and put on a prisoner after it has been unfolded. It will then open only with the key. Its popularity is due to the fact that it can be easily altered to make escape easy, so it features frequently in escape artiste's acts.¹

They brought out their first model Peerless type in the early 1950s and this has a simple lock which uses a key like that for a small cupboard lock (Fig.4). The second model, which has a tumbler lock, came out soon after (Fig.5) and the company appears to have ceased operations by the mid 1960s. One striking feature about these Peerless types is their rather flimsy looking linkage.

1. See the entry in the Escapology section of the Miscellany II chapter.

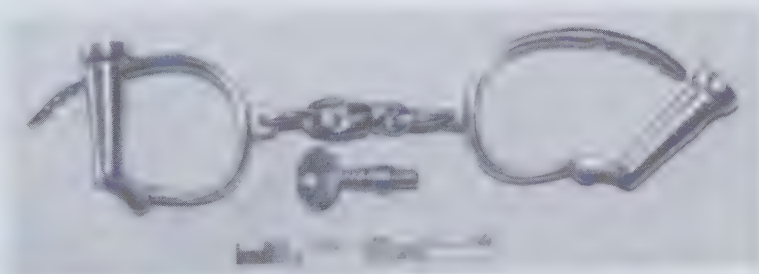


Figure 1. Standard handcuffs, short chain linkage (Chris Gower Collection).

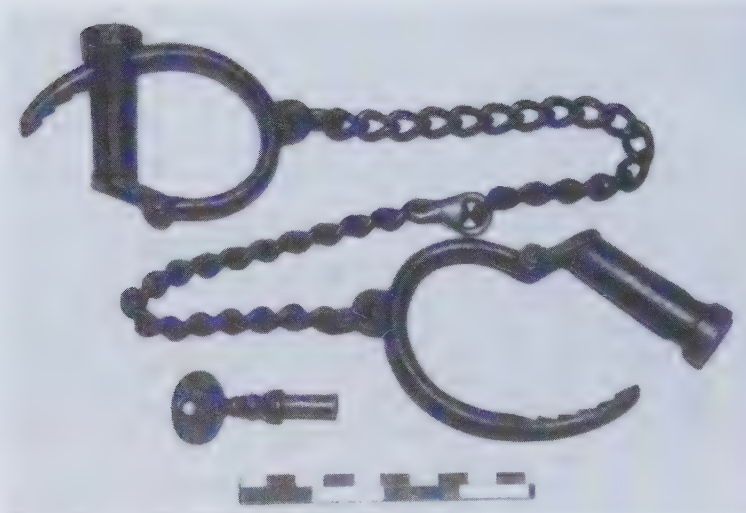


Figure 2. Standard handcuffs, long chain linkage (Chris Gower Collection).



Figure 3. "Hamburg 8" handcuffs (West Midlands Police Museum, Birmingham).

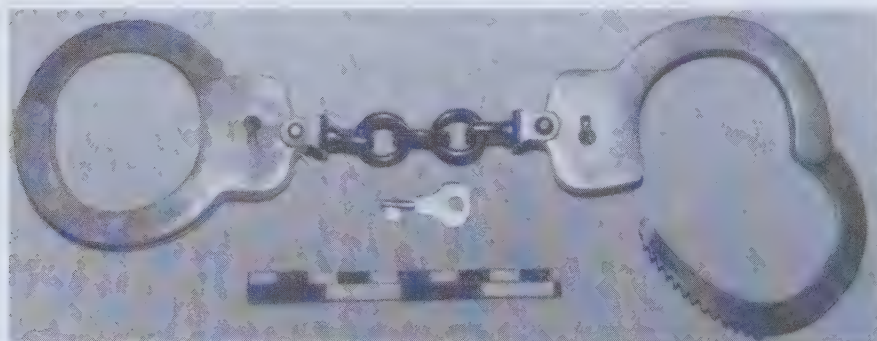


Figure 4. "Peerless" type handcuffs, round key (Chris Gower Collection).

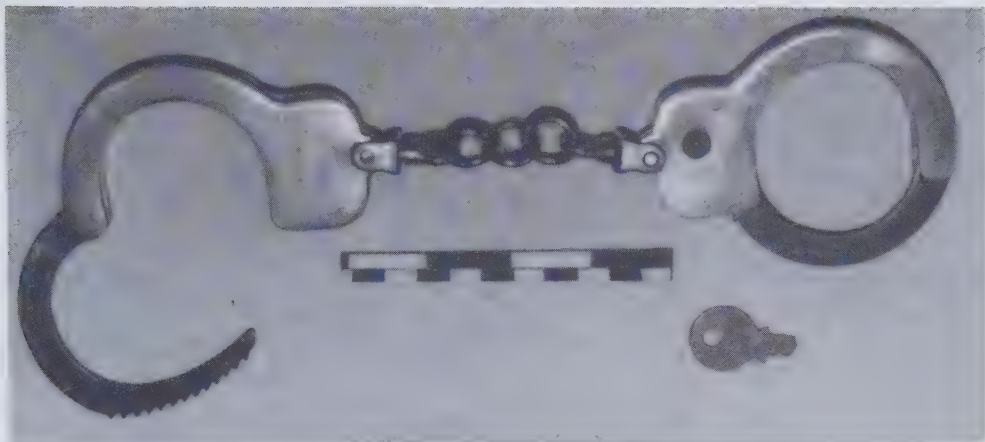


Figure 5. "Peerless" type handcuffs, flat key (Chris Gower Collection).

4. HORST STEIN.

This company appears to have had a kind of double existence. It was in operation in the 1930's and during World War II and then seems to have disappeared until it had a renaissance in the 1950's. Its first period products are rather chunkier than the later ones and are most unusual. Both handcuffs and leg-irons consist of a chain, very much like that used on motor cycles, attached at one end to the lock case and at the other to a round bar which enters the lock. The bar has ridges around it which engage the locking pawl so as to provide an adjustable shackle. The chain is covered with black, hard rubber tubing. The handcuff has only one lock into which both shackles fit (Fig.1). One form has a peculiar oval section knurled nut part way along the chain (Fig.2). The leg-irons each have a lock and are separated by a length of ordinary chain (Fig.3).

The second period products are said to have been designed for use in a German maximum security prison called Moabit and that name was used as a kind of trade mark for these models (Fig.4). These are improved, neater forms of the first period handcuffs (Figs.5 & 6) and leg-irons (Fig.7).¹ One obvious difference is that the bar which enters the lock is now square and has holes to engage the lock's pawl. The firm also produced their own very distinctive Peerless type handcuffs. These have only one complete cheek plate to the lock case so that the bow swings beside rather than through it. There is a normal chain linkage form (Fig.8 & 9) and also a form with a hinge that is very different to most other hinged types produced elsewhere (Fig.10). The shackles hinge around an axis parallel to the wrists in them, at right angle to the way usual hinged handcuffs go. The first model of these Peerless handcuffs locked in a similar way to the chain handcuffs, that is with holes in the jaw which engaged the locking pawl. Later models locked with the conventional serration and have a smaller key. The finish on these handcuffs is grey "Hammerite" enamel.

A padlocking chain handcuff, similar to that made by Clejuso, was also made. The company ceased operations about 1980.

1. See the reproduction Horst Stein items in the Reproductions section of the Miscellany II chapter.

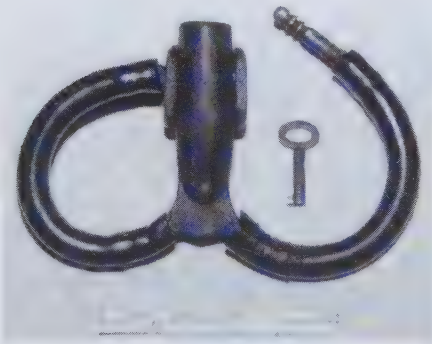


Figure 1. First pattern handcuffs
(Chris Gower Collection).



Figure 2. First pattern handcuffs with knurled nut
(Museum Mesta Brna, Brno, The Czech Republic).

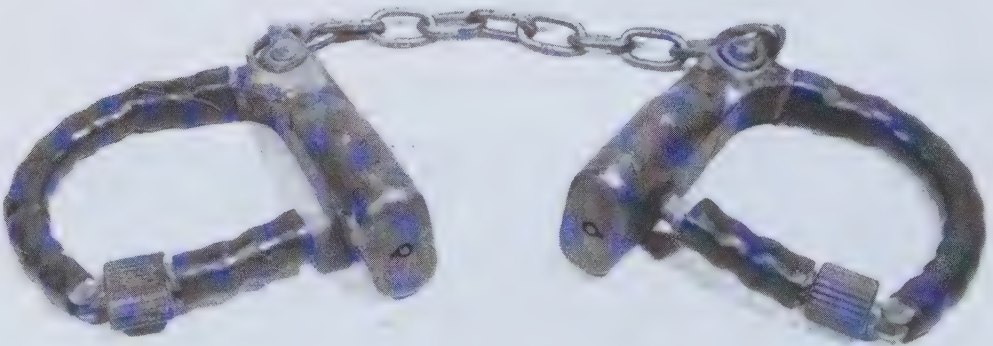


Figure 3. First pattern leg-irons (Museum Mesta Brna, Brno, The Czech Republic) (This item and the previous one were found in the Gestapo Headquarters in Brno at the end of World War II).



Figure 4. Page from Horst Stein "Moabit" catalogue.



Figure 5. Second pattern handcuffs, model 608 (Chris Gower Collection).



Figure 6. Second pattern handcuffs, model 609 (Chris Gower Collection).

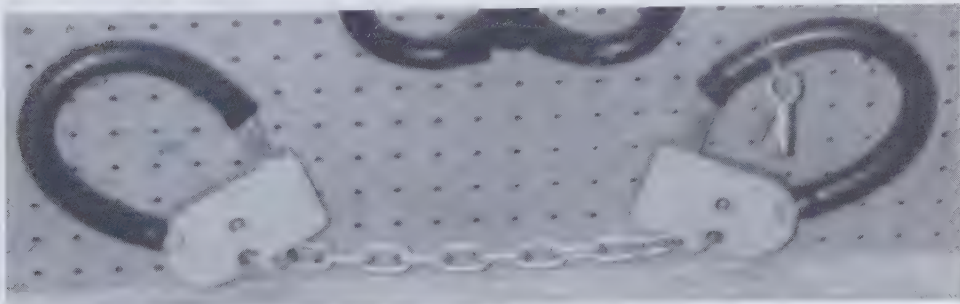


Figure 7. Second pattern leg-irons, model 610 (Chris Gower Collection).



Figure 8. "Peerless" type handcuffs with serration locking, model 616 (Chris Gower Collection).



Figure 9 "Peerless" type handcuffs with locking holes, model 675 (Chris Gower Collection)

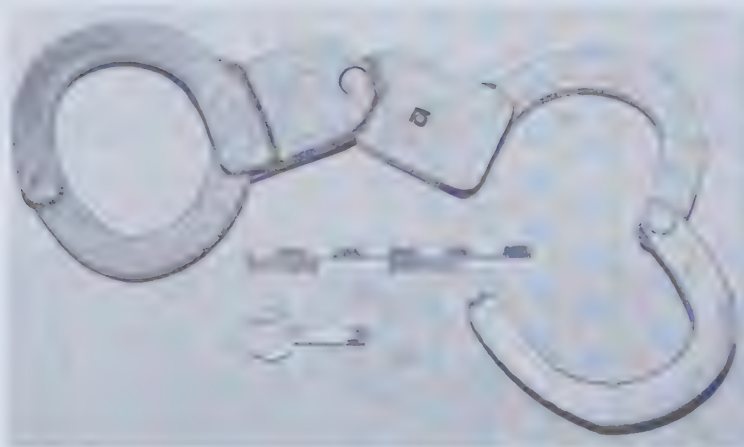


Figure 10. Hinged "Peerless" handcuffs with locking holes, model 615 (Chris Gower Collection).

5. SCHÜTZMARKE.

Handcuffs bearing the "DEUTSCHE POLIZEI",¹ mark were made by two companies whose relationship is not clear, but whose products are so much alike. The earliest patterns are probably those made by AUGUST SCHWARZ in Berlin. It seems that in the confused state of the manufacturing industries in Germany after the end of World War I, Schwarz set up in business importing handcuffs and police equipment from Britain. In particular, from 1920, he was buying and selling hinged handcuffs and whistles made by the Hudson company (see previous entry). Importing seems to have stopped in the 1930's and he started making copies of the Hudson products and that firm threatened legal action.²

The first pattern handcuff his firm made is a swing-beside hinged handcuff, with a two lever lock, which is generally regarded as the prototype of the Schützmarke models (Fig.1). It seems to have been based upon the Bockin handcuff patented in 1924 (but not in Germany). It is probable that this was in the late 1920's. Later he brought out swing-through hinged handcuffs, the second of which is an obvious copy of the Hudson hinged handcuff.³ This must have been around 1932/4 when he was copying Hudson products generally. By this date German industry had made a remarkable recovery and importing manufactured goods was discouraged.

There is also a handcuff of this type which often turns up, frequently called the "Gestapo"⁴ or "German Prison" handcuff, which bears no makers name (Fig.2). Some are of the opinion that it is Hagge's first model, but what is fairly certain is that it was produced in the 1920's or early 1930's.

Sometime prior to 1937 HEINRICH HAGGE in Bad Segeberg commenced production of Schützmarke hinged swing-beside handcuffs which continued well into the 1980's. There are two forms, model I has both keyholes on the same side, so that the shackles open oppositely and model II has the keyholes on opposite sides so that the shackles open the same way (Fig.3). In both these models, the lock can be removed from the lock case by removing a small screw from the front of the shackle when it is open. The later model III is like model I, but the lock cannot be removed (Fig.4). Double locking is usually with the key via the keyhole, but there is a version of model III which uses an external lever. These models usually have a three lever lock.

1. Literally German Police.

2. There is extensive correspondence about this in the Hudson company records.

3. See Tom Gross *Manacles of the World* for illustrations of the second and third models.

4. The ill reputed secret police of Nazi times.

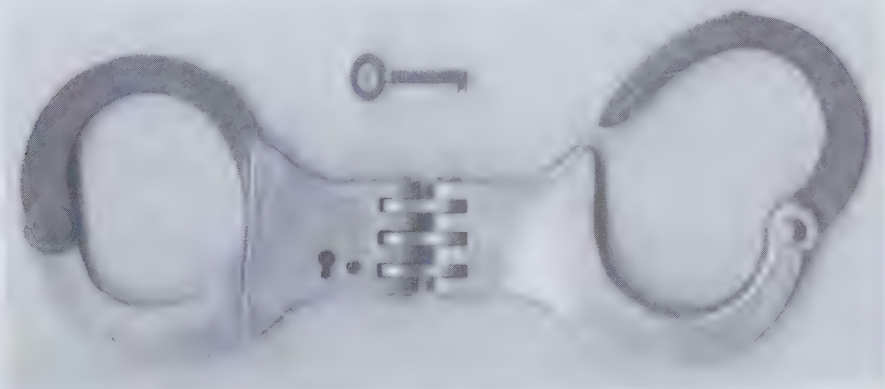


Figure 1. Schwarz first pattern handcuffs, marked AUGUST SCHWARZ and D.R.PAT. BERLIN SW11 (Chris Gower Collection).



Figure 2. "Gestapo" handcuffs.



Figure 3. Model II handcuffs.

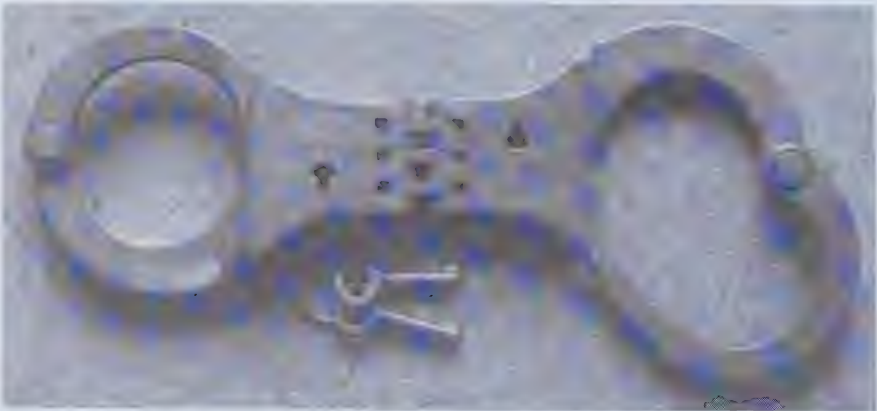


Figure 4. Model III handcuffs.

6. MARTIN.

This firm, based near Hanover, claims to be the world's smallest handcuff manufacturer and is really a one man business, founded by Martin Koppmann in 1997. Its products are most unusual and ingenious, but do not seem to have been designed for use by law enforcement agencies. A highly original and very well made range of restraints is produced, all made of aluminium alloy. The handcuffs are all rigid (Figs. 1, 2 & 3), one version is very long (c.45cms) and fitted with a slot in the middle to take the security link of a belly chain. There are collars and leg-irons as well as handcuffs and most of these are available in a variety of rigid combinations. These restraints seem to be produced primarily for the "S/M" leisure market.



Figure 1. Prototype rigid handcuffs (note single keyhole).



Figure 2. Standard model handcuffs (Mike Riccard Collection).

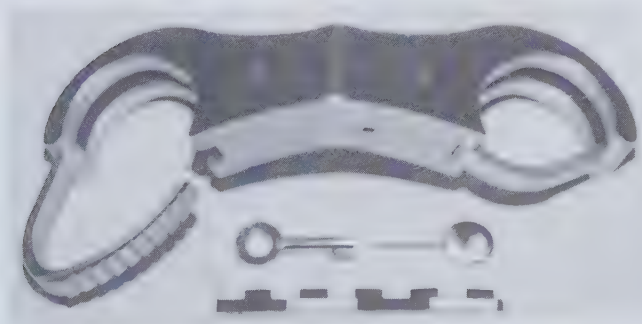


Figure 3. Bent model handcuffs (these are more comfortable handcuffs for the prisoner as it allows the arms to be held at a natural angle) (the keys supplied are identical to the Clejuso leg-iron type; the author made the keys shown, which are a better fit – the bitless key is for operating the double lock buttons, one of which is shown depressed).

7. EAST GERMAN MAKERS.

Hinged handcuffs, superficially similar in design to the Hagge models described earlier, were produced in what was Communist East Germany prior to re-unification. The difference is that both types of these handcuffs have two cheek plates, so that the swinging bow model has a swing through mechanism (Fig.1 & 2). The other model does not have a swinging bow, so requires unlocking before application (Fig.3). A swinging bow model leg-iron is also made and this is unusual in that the linkage is by means of a rubber covered steel cable rather than chain (Fig.4), though a chain link version was made, but in much smaller numbers.



Figure 1. Swinging bow model handcuffs.



Figure 2. Swinging bow model handcuffs (note smaller hinge) (Gunter Kirsche Collection)

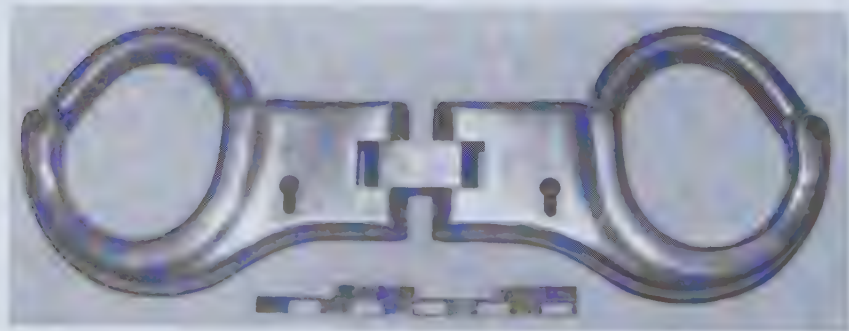


Figure 3. Non-swinging bow model handcuffs (Peter McCahon Collection).

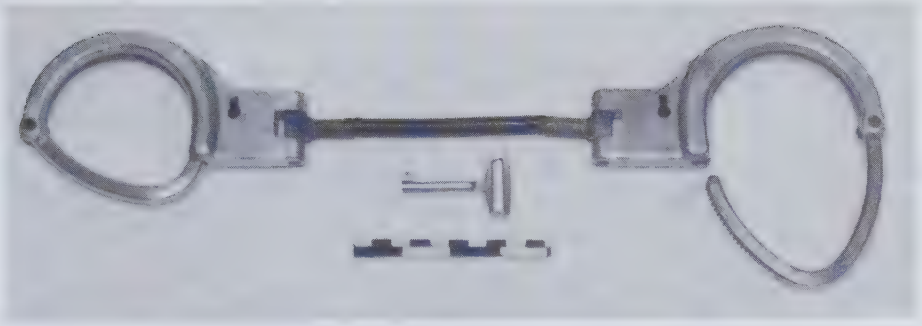


Figure 4. Cable linked leg-irons.

8. BERLINER.

This company seems to have been in business during the latter part of the nineteenth century and probably ceased operation by the time of World War I. Its handcuffs are particularly famous because of the connection with Houdini. The genuine article is sufficiently uncommon for there to have grown a considerable market for replicas. Alas, not all makers of these replicas are as scrupulous as Stockade Locksmiths of Australia in identifying their products, so that many fake Berliners turn up. A combination set of a belt and handcuffs is known to have been made by Berliner.¹

1. Sets are illustrated in the Mühlenfeld advertisement featured later.



Figure 1. Solid pattern handcuffs
(Chris Gower Collection).



Figure 2. Chain pattern handcuffs
(Chris Gower Collection).

8. STOTZ.

This is another nineteenth century company that may well have continued operating until World War I. The firm made handcuffs and leg-irons. The handcuff (Fig.1) is locked with a barrel lock of the familiar type used in darbies, but the lock case is positioned at a right angle to the position used in darbies and uses a similar screw key, but with a left hand thread. The leg-irons (Fig.2) are a larger version of the handcuff, with a longer chain linkage. Like the Berliner, this firm's handcuff has also been reproduced in recent times.



Figure 1. Stotz handcuffs (Chris Gower Collection).



Figure 2. Stotz leg-irons (Günter Kirsche Collection).

9. MISCELLANEOUS MAKERS.

SCHLUTER produced hinged handcuffs similar to the "Gestapo" pattern described above, but possibly earlier.¹

Another most interesting handcuff is that known as the "DOLLAR SIGN", because of its unusual shape (Fig.1). This is a scissor action handcuff whose locking mechanism only works on one arm of the shackle. Date and maker are unknown, Chris Gower is of the opinion that it was made during the same period as the Berliners. It is possible that this handcuff was made in Austria rather than Germany.



Figure 1. "Dollar sign" handcuffs (Yossie Silverman Collection).

A most interesting rare handcuff is that called the SCHWARTIGER (Fig.2) by some people. It is possible that it may be of Russian rather than German origin, though that seems unlikely because of its very high quality manufacture.

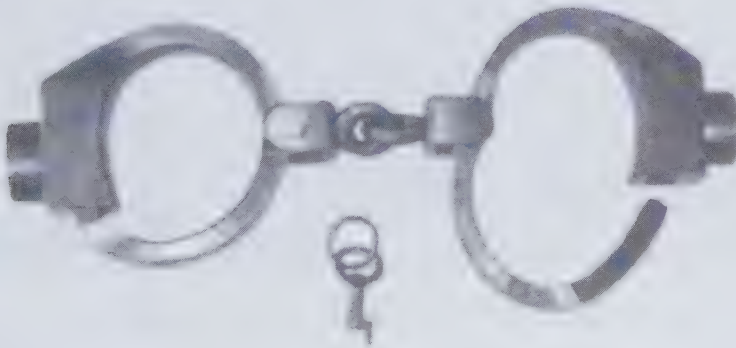


Figure 2. Schwartiger handcuffs (Yossie Silverman Collection).

The firm ABUS is best known for its production of padlocks and in 1997 it made the lock for a very good quality high security leg-iron, but it is not known if they made the whole fetter (Fig.3). It is thought that only 20 items were made, half of which went to private individuals and the rest to police and the Bavarian Justice Department. It is adjustable to four non-ratchet notches, somewhat like the Chubb "Escort" handcuff.²



Figure 3. Abus leg-irons (Günter Kirsche Collection).

A firm called MÜHLENFELD existed in Barmen, which is now part of Wuppertal, who made restraints similar to those made by Berliner, probably at about the same time. The model 113 illustrated is known as the "Dortmunder" handcuff (Fig.4). The catalogue page shown indicates that the firm also supplied Stotz and Berliner handcuffs etc (Fig.5).



Figure 4. "Dortmunder" handcuffs (Michael Busch Collection).

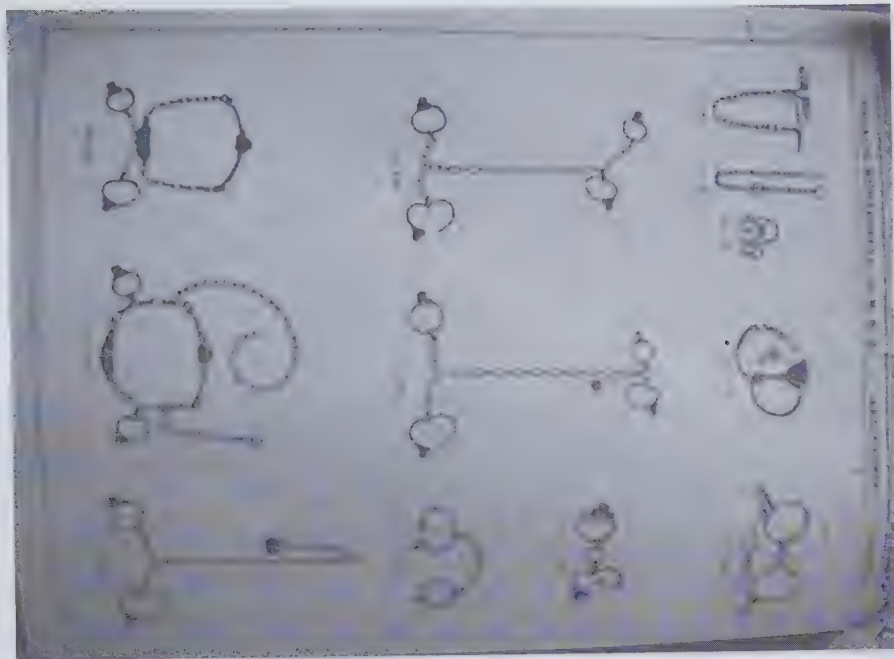


Figure 5. Page from the Mühlendorf catalogue.

An unknown maker produced a handcuff marked simply POLIZEI which looks very much like some French models (Fig.6). It is also unusual in that double locking is by means of a padlock with five holes provided. It is possible that these may in fact have been made in France soon after World War II for the German market.

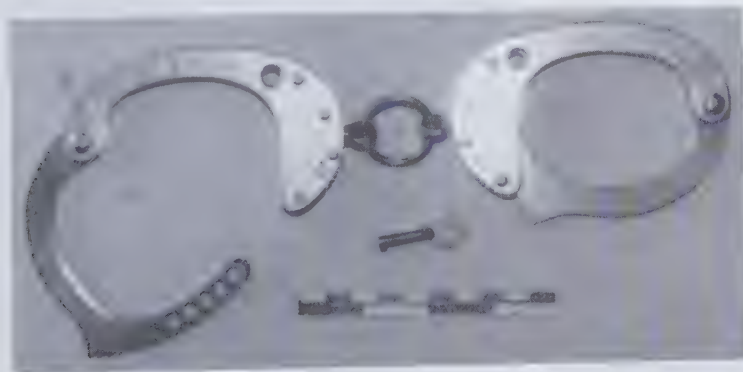


Figure 6. Polizei handcuffs (Chris Gower Collection).

1. The author does not have any pictures of these handcuffs, so refers the reader to Tom Gross's book *Manacles of the World*.
2. The author thinks that they would be the ideal leg-irons to use with those handcuffs.

1. UNKNOWN MAKER.

The author has heard of two models of handcuff. The first model is chain linkage Peerless type variant which has a lock case of a shape similar to the first Peerless handcuff (Fig.1). The lock is a little more complicated than the common Peerless type, having a "star" wheel mechanism and uses a flat key. The chain linkage is unusual in that there is only a single ring between the swivels. The other model is a folding type (Fig.2), closely resembling the Spanish Alcyon type figured later, but with external double locking buttons protected by extensions of the lock case frame.



Figure 1. Single ring linkage handcuffs (Chris Gower Collection).



Figure 2. Hinged handcuffs (the double lock button is at the bottom of the lock case and the flaring of the lock case plate forming the guard is just discernable) (Günter Kirsche Collection).

Considering Italy's status as one of the leading industrial nations of Europe, it is surprising that very few types of restraint seem to be made there. The handcuff of preference for the Carabinieri, a national police force which is really a branch of the army, is the primitive "bagno"¹ type. Some of these "bagno" handcuffs, whose manufacturer is unknown, appear to have integral locks,² but probably, padlocking is the norm. The only illustration the author has been able to find of the "bagno" type, is the figured newspaper photograph (Fig.1).³

1. SILE.

This company produces a typical Peerless type handcuff, indistinguishable from the almost universal design, except by the trade mark (Fig.2).

1. See the Medieval chapter for an explanation of the origin of the word "bagno".
2. Ian McColl, the Australian locksmith, makes a good replica of the Italian locking "bagno".
3. See also the replica "bagno" made for the author by a local blacksmith in the Reproductions section of the Miscellany II chapter.

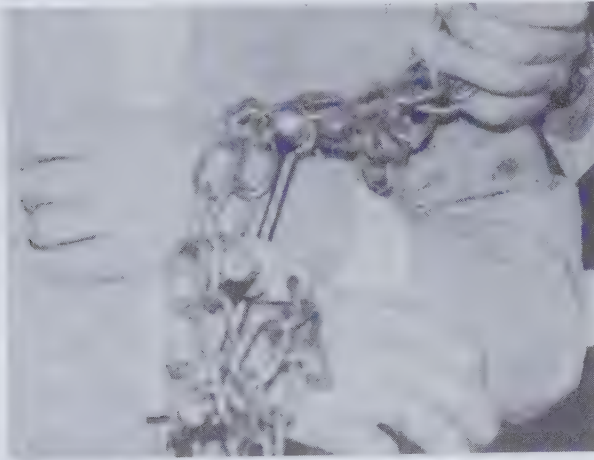


Figure 1. Prisoner being transported in "bagno" type handcuffs (Guardian).



Figure 2. "New Police" model handcuffs.

1. LIPS.

It is said that this company was founded well before World War II and, like the Chubb company in Britain (with which it has links nowadays), it manufactured a range of locks. It is possible that it also produced darby type handcuffs. The first modern type made by the firm looks a bit like the first Peerless handcuff, but has a different key hole (Fig.1). This is double slotted so that the key can be introduced in two ways. This is so that the double lock can be operated. In the early 1980's the firm brought out a handcuff which is identical to that made by the German company Schützmarke, but having the double lock activated by an external lever (Fig.2). The key is needed to undo the double lock.

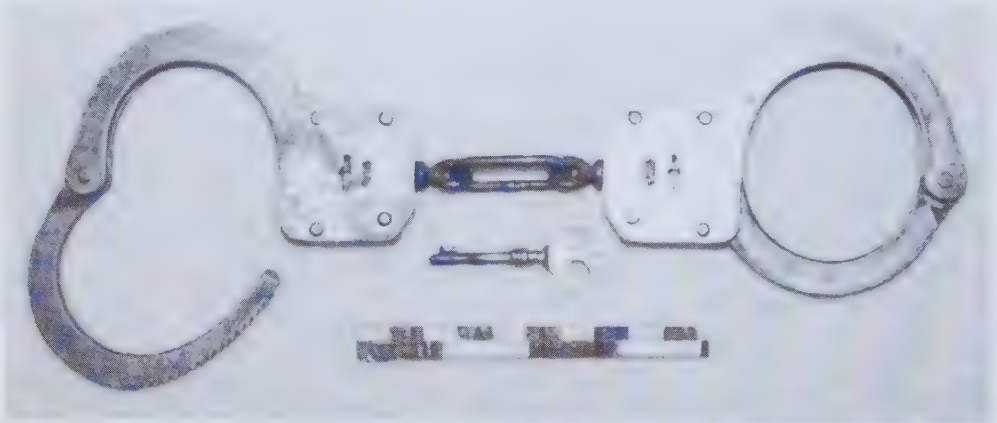


Figure 1. Early Peerless model handcuffs.

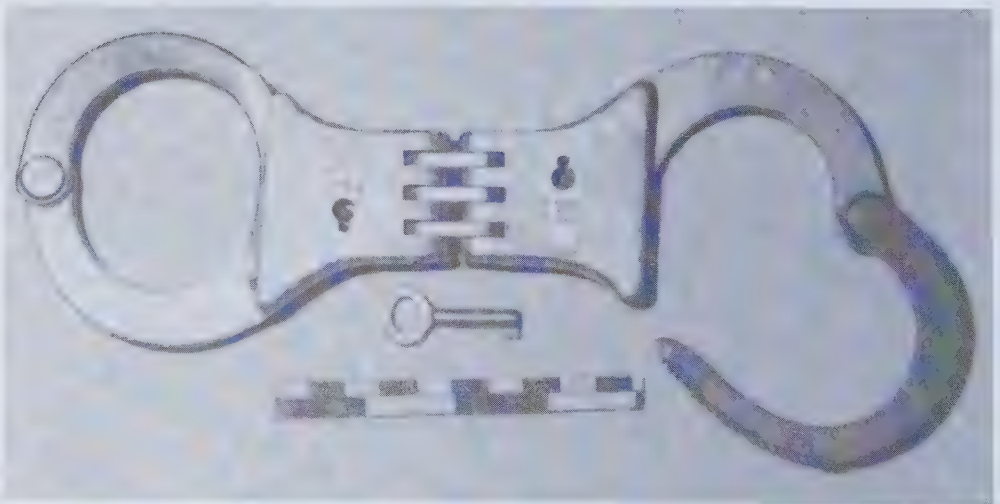


Figure 2. Hinged pattern handcuffs.



Figure 3. Hinged pattern handcuffs folded (note the double locking lever).

(i) POLAND.

1. UNKNOWN MAKER.

The first handcuff figured is a typical Peerless type (Fig.1), probably dating from the early post World War II period. The only noticeable difference is the key, which has an elongated tip to operate the double lock rather than a peg on the handle. The second similar model is marked PR093 (Fig.2) and is later, maybe 1980-90, or even current. This model has two most unusual features. The swinging bow has a double set of teeth to accommodate the anti shim device, a feature which is rare in swinging bow handcuffs,¹ though it is found in handcuffs of the Bean type in the U.S.A. for example. The other very unusual feature is that the handcuffs will not double lock unless the teeth are engaged in the lock. The pair of leg-irons (Fig.3) illustrated are believed to be Polish, because of the similar finish to the second pair of handcuffs. It bears a trade mark MW, the letters separated by a drawing of a rifle.

1. See the Yuil handcuffs in the Korea section below.



Figure 1. Early pattern handcuffs (Chris Gower Collection).

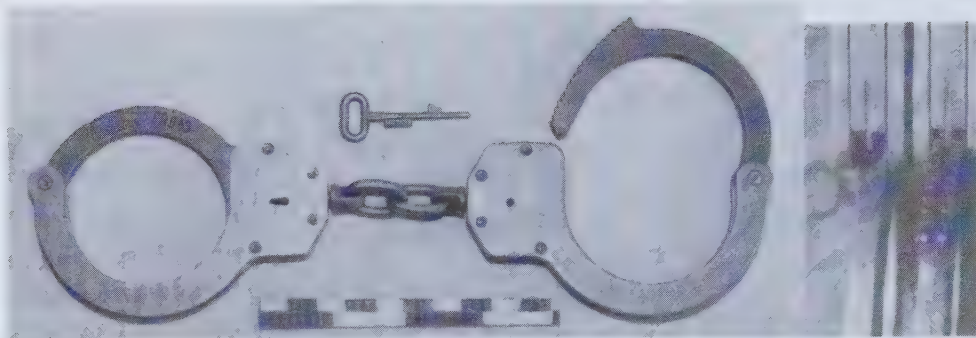


Figure 2. Current model handcuffs (note the anti-shim device) (Hiatt's Collection, Birmingham).

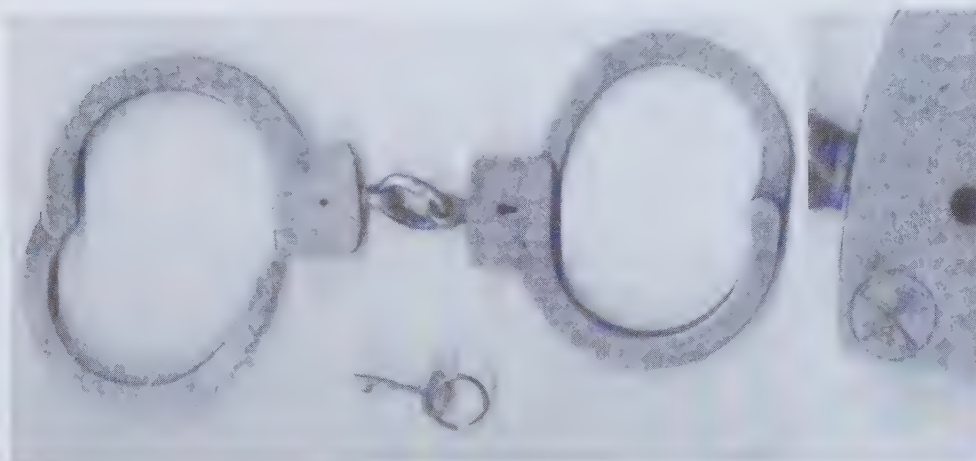


Figure 3. Leg-irons (Chris Gower Collection).

(j) RUSSIA.

Photographs of old Russian restraints show medieval type riveted irons whose only distinctive feature was the practice of putting a shaped ring in the centre of the leg-iron chains to denote the crime of the wearer. For example, murderers were denoted with a heart shaped ring. There is an early handcuff of modern type which looks very much like one of the earlier patterns of the German "Deutsche Polizei" handcuffs (Fig.1).

The earliest Peerless type handcuffs that turn up are very crudely made, with oddly large lock cases (Fig.2). It is not known when these were manufactured, but it could well have been during World War II. An interesting and rare handcuff is marked BUTIRSKAYA PRISON (in Russian) and the date 1937 (Fig.3). It has a hole and star wheel locking mechanism which is operated by a key whose hole is on the side of the lock case. However, it is thought by some that this handcuff may in fact have been made in Germany and the identifying plates added in Russia.

1. UNKNOWN MAKER.

In the 1990's¹ a modern Peerless type was produced, indistinguishable in design from the common pattern. These are found with chain (Fig.4) and hinge (Fig.5) linkages, marked HEЖХОСТЬ. There is also a five shackle gang chain set, marked SVEKT (Fig.6). The most unusual item is a shackle attached to a gadget which is designed to be hammered into a drilled hole in a wall to anchor it, marked ПРИКОП (Fig.7).

1. It seems likely that this maker emerged after the collapse of the Communist regime.



Figure 1. Early hinged pattern handcuffs (Michael Busch Collection).

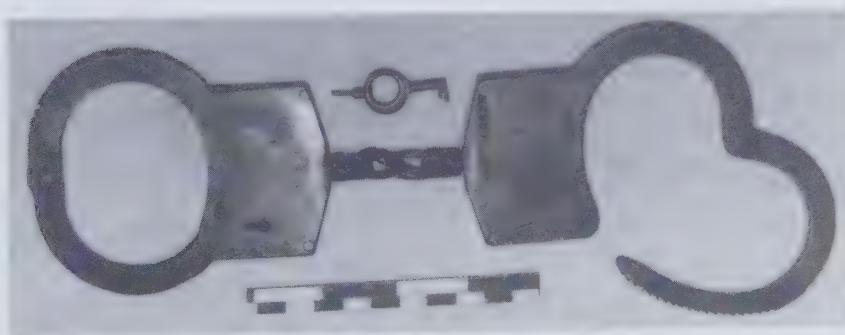


Figure 2. Early Peerless type handcuffs (Chris Gower Collection).



Figure 3. "Butirskaya Prison" handcuffs (E-bay).

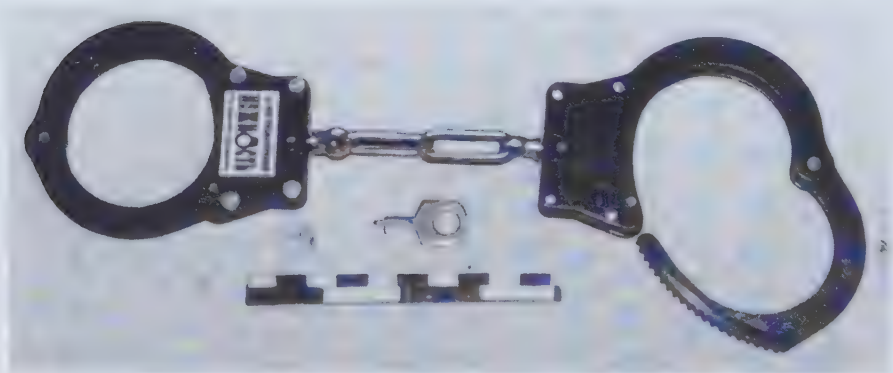


Figure 4. Modern Peerless type handcuffs (Chris Gower Collection).



Figure 5. Modern hinged pattern handcuffs (Chris Gower Collection).

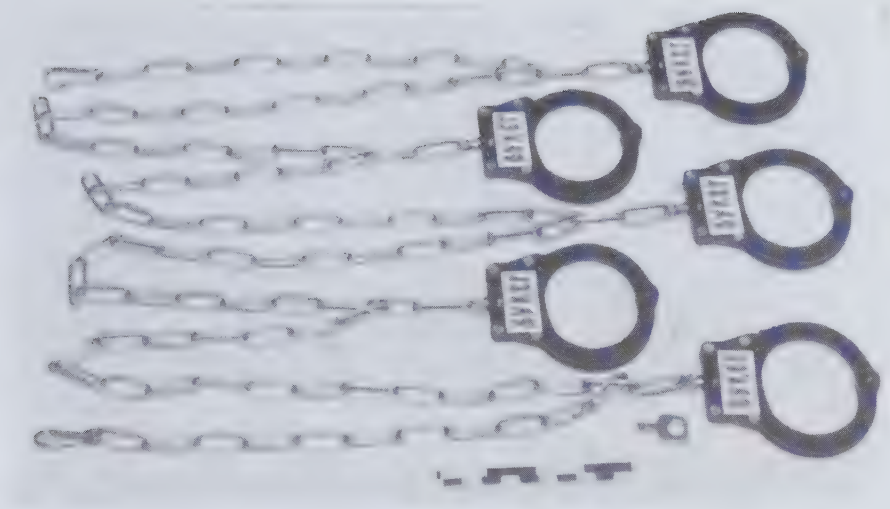


Figure 6. Gang chain (Chris Gower Collection).

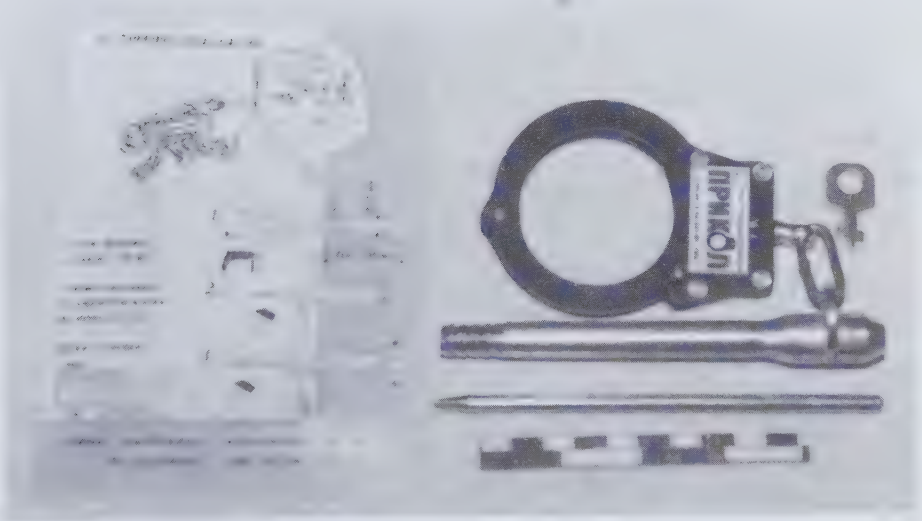


Figure 7. Handcuff and wall anchor bolt, with instruction leaflet (Chris Gower Collection).

Several of the Spanish handcuff models closely resemble the early Czech Ralkem models, so it may be that there was a relationship rather like that of the H & R Super types of China, Finland and the United States of America listed elsewhere.

1. LARRAÑAGA Y ELORZA.

This company, founded in 1918, is one of the major European manufacturers and it is said that it started making handcuffs in 1921, but the author knows of no definite pre-World War II models. It trades under several different names in various parts of the world, in Europe it mostly trades as ALCYON. In the United States of America and elsewhere it trades as CHIEF OF POLICE, ROMO and ZEPHYR CHIEF amongst others.¹ The items illustrated are marked ALCYON.

The first pattern produced until the 1950's, is a very neat one which resembles the early Czech Ralk handcuff (Fig.1). This comes in two forms having either a round or a flat key. It is possible that the round key variety is the earlier model, which may pre-date World War II. The lock has a "star" wheel mechanism and is single locking only. These are often marked with the date of manufacture. Later models are of the common Peerless pattern (Fig.2). It should be noted that the firm sometimes uses the terms single and double locking in its advertising to denote the construction of the locking pawls, there being either one or two in the lock, rather than the usual double locking ability. All their common Peerless models double lock in the usual way, that is via a hole in the top of the lock case. Note also the unusual universal joint linkage on the pattern they call their high security model, which also has a slightly more complicated lock with a flat key (Fig.3). This model is also available with chain linkage (Fig.4). The hinged model is quite distinctive, having a simple construction which allows no twisting movement at all (Fig.5). The handcuff will only fold flat one way and goes to a right angle when folded the other way.

The company also produces leg-irons (Fig.6), belly chains fitted with handcuffs which are held on each side of the body (Fig.7) and combination handcuff/leg-iron sets.

1. It is probable that it makes handcuffs for the British firm H.P.P. which are sold under the TROJAN brand name.

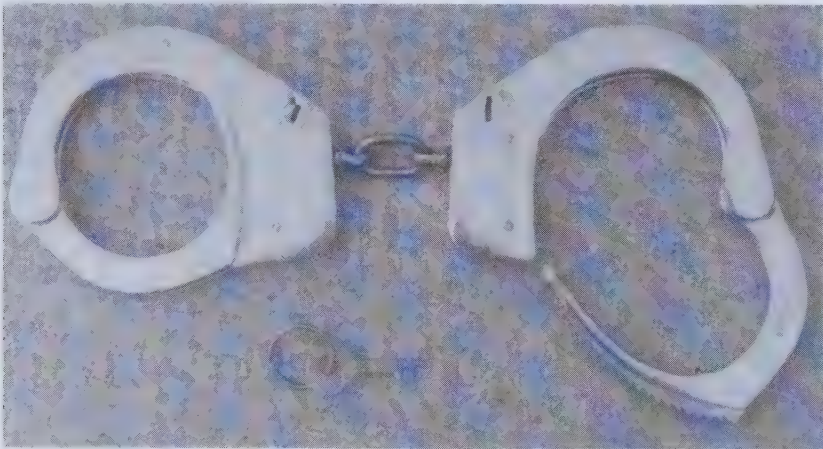


Figure 1. First pattern Peerless handcuffs, flat key type.



Figure 2. Second model Peerless handcuff.



Figure 3. Universal joint linkage model, with original box (green in colour) (the keys have red plastic covered handles).



Figure 4. Chain linkage version of the previous model (E-bay).



Figure 5. Hinged model handcuffs.



Figure 6. Standard leg-irons.

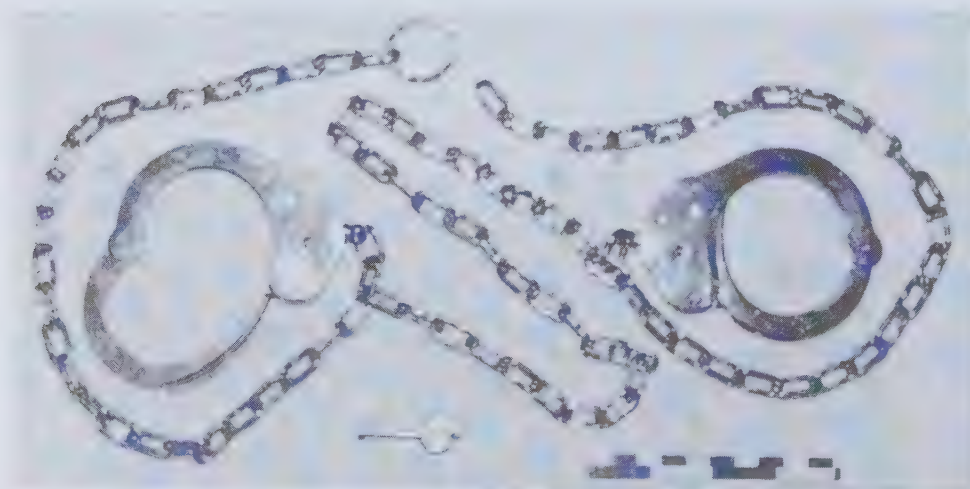


Figure 7. Belly chain and handcuffs.

2. BONIFACIO ESCHEVERRIA S.A.

This company makes STAR handcuffs, which look identical to the early Alcyon types (Fig.1).

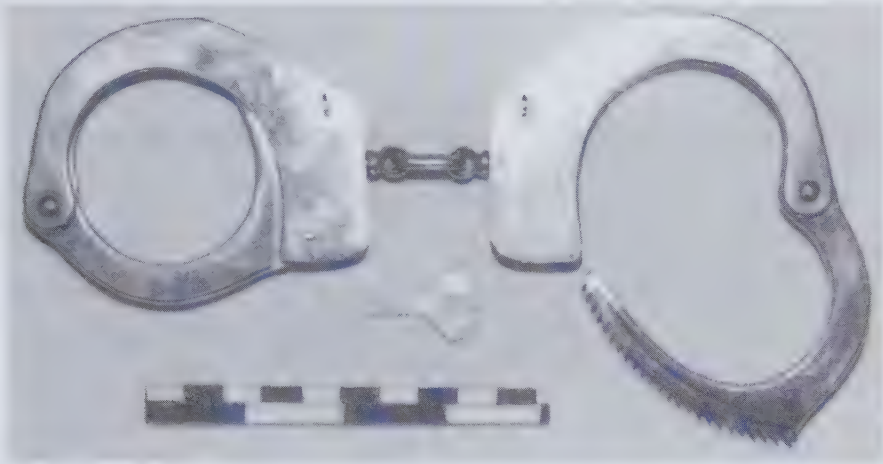


Figure 1. Standard handcuffs.

3. FURY.

It is not known to the author whether or not this is a separate company, but the handcuffs shown (Fig.1) closely resemble those of the previous firms, but with an unusual universal joint linkage, reminiscent of the Alcyon high security model.

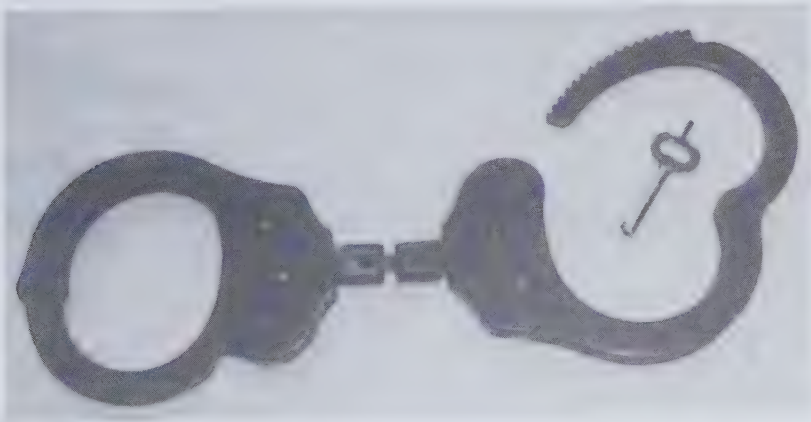


Figure 1. Standard handcuffs (E-bay).

4. VALCO

This may be yet another firm making handcuffs similar to the previous companies, though it could be just another of the alternative names for Alcyon types (no illustration).

5. PROSELEC ESPAÑA.

This company is Hiatt's Spanish agent, so the handcuff advertised by it is Hiatt's model 2010 (no illustration)..

(I) UKRAINE.

1. LASKA.

A well made hinged handcuff, usually in blued steel finish, is often described as Russian (Fig.1). Its most unusual feature is the round key, operating rather like the Hiatt 1960 handcuff.

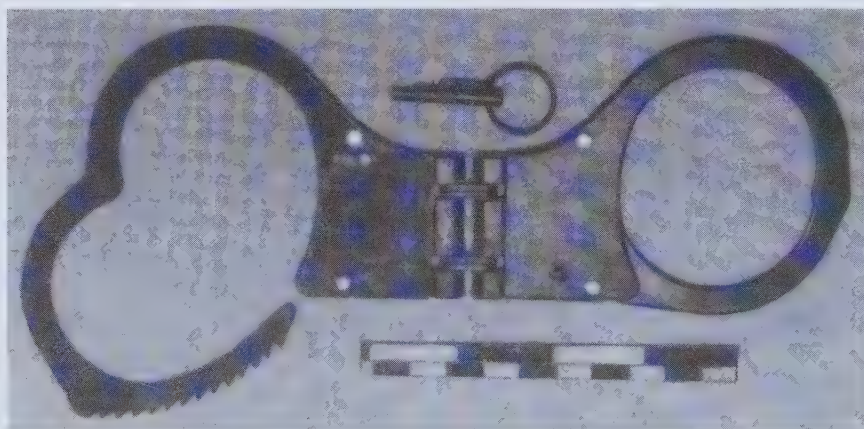


Figure 1. Hinged model handcuffs (Chris Gower Collection).

C. AMERICA.

(a) CANADA.

It seems that there are no commercial manufacturers of restraints in Canada. However, the restraints produced by the following firm are sufficiently original to warrant inclusion.

1. SECURITEC.

This is a small one man company, rather like Martin in the Germany section, owned by the well known escapologist, Steve Santini. He had connections with Hiatt-Thompson in the United States of America at one time and invented that firm's "Blue Box # 2". He also devised a modification of Hiatt's standard chain link handcuff which made it more secure (Fig.1). A small cover fitted over the keyhole is secured with an Allen bolt, whose key is a modified double locking peg on the key. Another handcuff which continues the practice of making the keyhole difficult to get at, particularly by the prisoner in it, is the hinged model (Fig.2). The hinge is of an unusual kind, similar to that used in the German Horst-Stein "Moabit" models. When the hinge is straight, the keyhole is covered and if the prisoner moves the hinge to a position to uncover it, it then becomes extremely difficult to operate any kind of pick. The handcuff can be made very secure by fitting a padlock over the hinge assembly.

The two solid state handcuffs are interesting. The first is simply a variant of the Hillyard handcuff, noted later with the Gill items in the U.S.A. section of this chapter (Fig.3). The second massively made handcuff¹ is probably an unique design (Fig.4). When the shackles are closed, the handcuff can be opened by pressing aside two catches. This is very difficult for the wearer to do, especially if the captor holds on to the handcuff, so it has something of the characteristics of a grip. However, if the special high security padlock supplied with it is put through the locking hole, the handcuff becomes very secure and is then one of the strongest high security models ever made. A belly chain attachment was supplied with the author's set.

Steve Santini told the author that the firm no longer produces a run of any item, but confines itself to designing high security products and the development of inventions to improve existing restraints.²

1. Made from laser cut 5mm (nearly 1/4 inch) steel plate.

2. See Steve Santini's book *Devices of Human Restraint* which has pictures of some of his other inventions.



Figure 1. Hiatt HS1 handcuffs - model 2010 handcuffs with added keyhole cover.

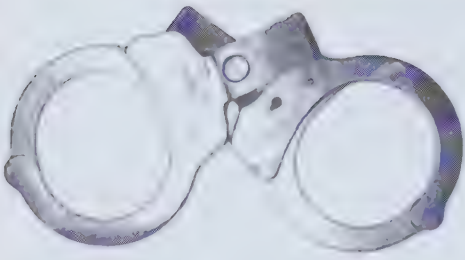


Figure 2. Hinged model handcuffs (Yossie Silverman Collection).

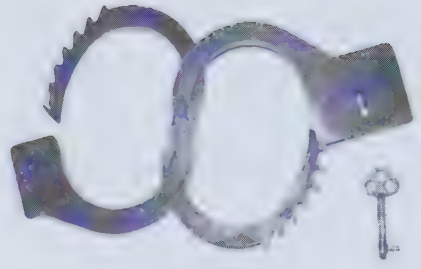


Figure 3. Hillyard type handcuffs (Yossie Silverman Collection).



Figure 4. "Titan" handcuffs (originally supplied black steel finish, later nickel plated)

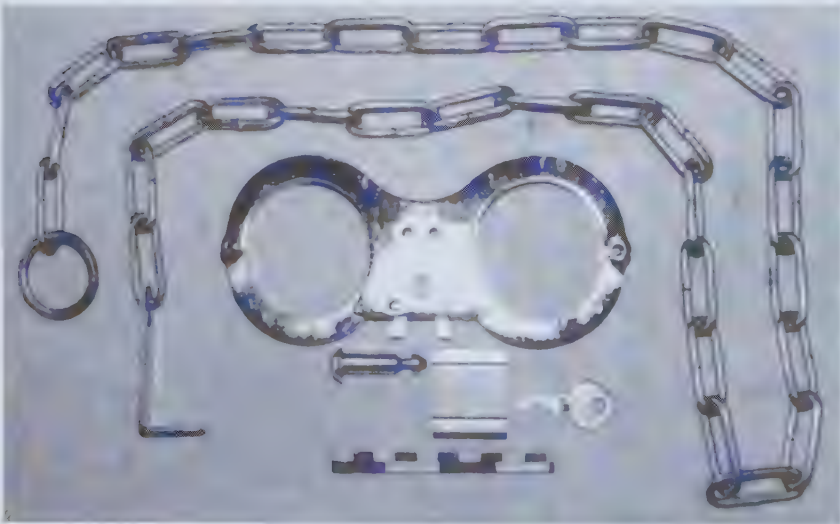


Figure 5. "Titan" handcuffs with special padlock and belly chain.

(b) THE UNITED STATES OF AMERICA.

The country which has had by far and away the largest number of restraints manufactured during the last one hundred and fifty years or so is the United States of America. This is true not only in terms of the number of firms, but also in quantity produced and range of types. Prior to the Civil War in the mid nineteenth century, the few manufacturers around produced darby types indistinguishable from those being made in Europe at the same time. Probably the first distinctively different restraint produced was the Lilly iron which is really a reversion to a medieval pattern. At about the time of the Civil War and its aftermath there were dramatic changes. There was a surge of activity which produced several interesting handcuff types. The first handcuff to be patented was that of Kimball in 1860 (Fig.1). After that a wide variety of types was introduced and experimentation in design to produce ever more secure and efficient restraints continued unabatedly. The culmination of all this experimentation was the swinging bow handcuff patented by Carney in 1912 (Fig.2). That invention revolutionised the restraint industry and nearly all handcuffs and leg-irons made since then have been variants of the swinging bow pattern.

Prior to the invention of the swinging bow mechanism Tower handcuffs and leg irons were probably the most successful restraints. They were certainly popular, with only Bean products as serious rivals. Other popular makes were Maltby/Judd/Mattutuck and Marlin Daley. The best of these restraints continued in production for over a quarter of a century after Carney's patent.

The problem of manufacturers is quite complex, so the author has proceeded by listing restraints under the names by which they are commonly known and in a very approximate chronological order. Hopefully the text will explain the complexities as it proceeds.

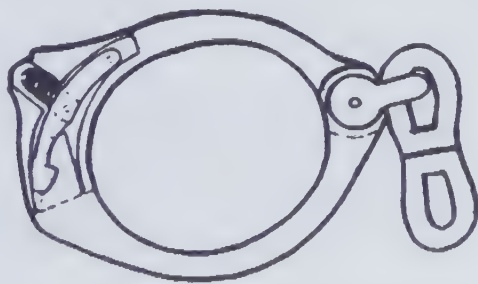


Figure 1. Kimball's handcuff patent drawing.

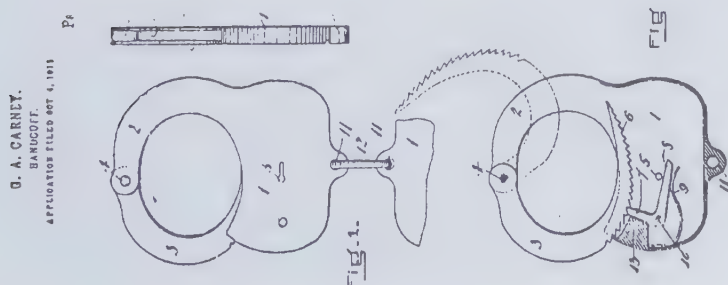


Figure 2. Carney's handcuff patent drawing.

1. PROVIDENCE TOOL CO.

This is one of the oldest companies and seems to have been active from before the Civil War period, perhaps into the early years of the twentieth century. Its products are usually typical darby handcuffs (Fig.1) and leg-irons (Fig.2). A distinguishing feature is the practice of making a round, somewhat bulbous top for the lock case after the sealing plug has been fixed. This firm may also have made handcuffs for the Wells Fargo Co. (Fig.3).



Figure 1. Standard darbies (Chris Gower Collection).

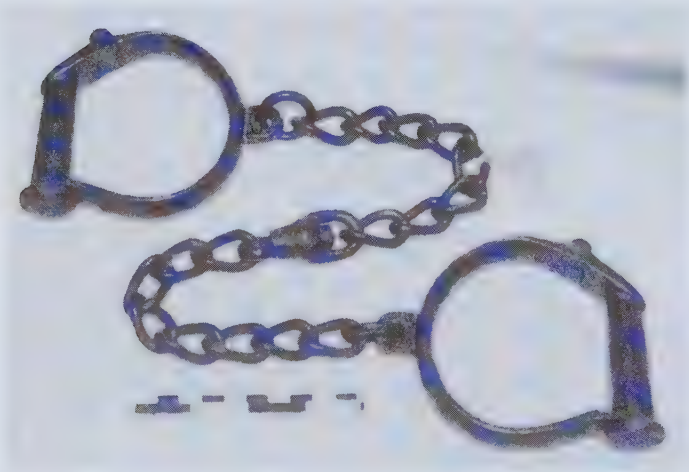


Figure 2. Standard leg-irons (Royal Armouries Museum, Leeds).

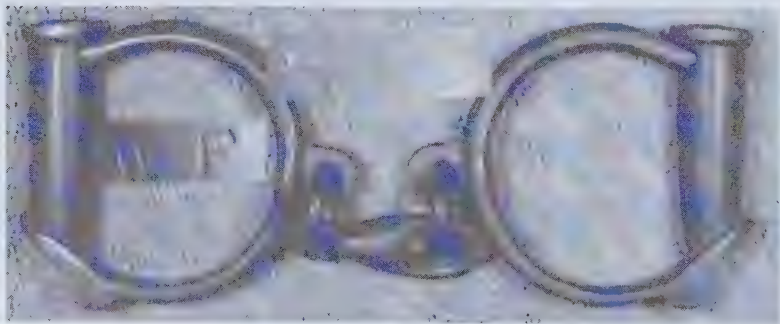


Figure 3. "Wells Fargo" handcuffs (E-bay).

2. LILLY.¹

A famous and singular design of handcuff² was invented by Horace Lilly at about the time of the Civil War (Fig.1). It is manufactured from flat bar, making a rigid handcuff holding the hands about 12 inches (30 cm) apart. Locking is by a simple screw plug mechanism. Leg-irons were also made and these are more conventional in design.

1. Sometimes spelt Lillie. He is variously described as being in the Navy or the Marine Corps.
2. It is said that Horace Lilly died whilst wearing a pair during a bout of *delirium tremens*.



Figure 1. Standard handcuffs (Chris Gower Collection).

3. RANKIN.

This Philadelphia company produced handcuffs and leg-irons during the latter half of the nineteenth century. The first model handcuff is that generally known as the DELASTASIUS (Fig.1), that being the name of its 1861 patentee. This was followed by the standard Rankin model patented five years later (Fig.2). This handcuff has a different shaped bow, with a prominent thumb notch for ease of opening and comes in two sizes. The leg-iron has the round configuration of the Delastasius handcuff (Fig.3) and also comes in two sizes.

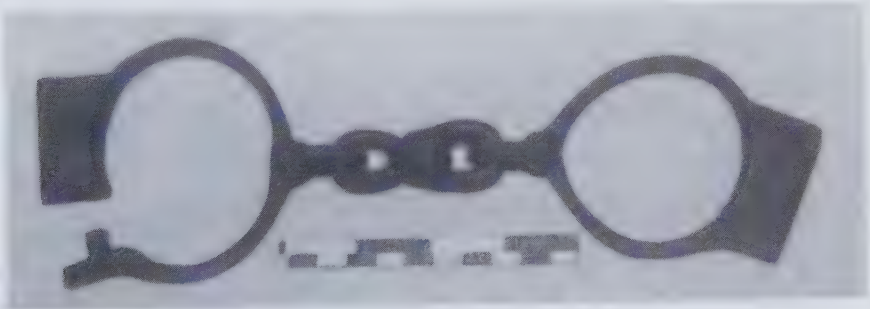


Figure 1. Delastasius handcuffs (Chris Gower Collection).



Figure 2. Rankin handcuffs (Chris Gower Collection).



Figure 3. Rankin leg-irons (Chris Gower Collection).

4. ADAMS

This famous handcuff was patented in 1862 and was the first adjustable handcuff (Fig.1). The first, pre-patent model is slightly different to the standard model in that it has a somewhat larger bow with a few more notches. Leg-irons, which are just a larger version of the handcuffs and have a longer chain linkage, were also made.

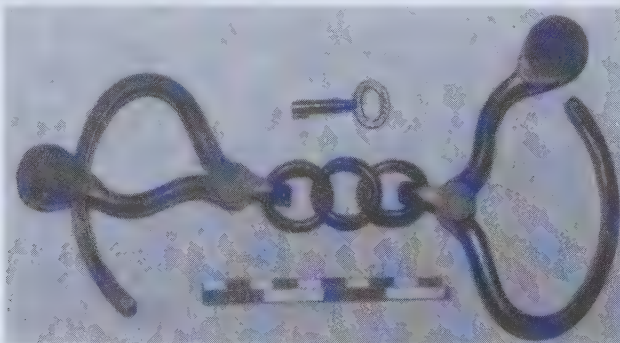


Figure 1. Standard handcuffs (Chris Gower Collection).

5. PHELPS.

With his important transitional handcuffs, O.C.Phelps developed Adams' invention, moving the lock to the inside of the bow (Fig.1) producing a neater design. Unfortunately, he died before he could patent his design. After that the idea was developed further by John Tower.



Figure 1. Standard handcuffs (marked O.C.PHELPs and PATENTED JULY 17'66) (Chris Gower Collection).

6. WISNER & HOYT.

These handcuffs (Fig.1) are an interesting variant of the Adams design and were patented in 1869 by J.A.Wisner and M.Hoyt. They have the locking serration on both sides of the jaw so giving an extra secure lock. This method of locking is seen again in the later in the Marlin Daley handcuffs.

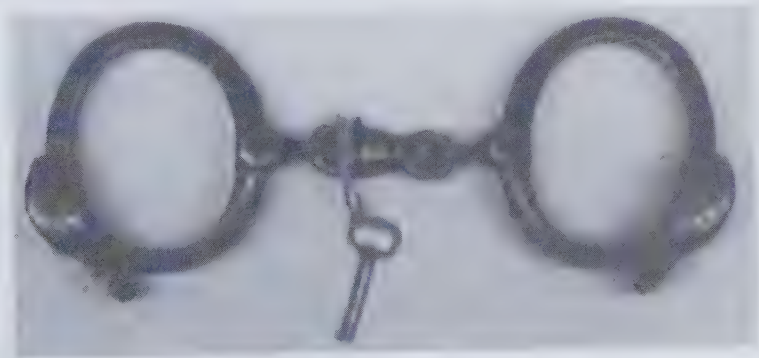


Figure 1. Standard handcuffs (Stan Willis Collection).

7. TOWER

This company came into being some time around 1874, the date of the first Tower patent. Its restraints remained in production in one form or other until the 1940's. Some collectors believe that its products were made by the UNION HARDWARE Co. right from the start, but others think that this firm only became involved when it took over the Tower business at an unknown, but rather later date.

The first model handcuff (Fig.1) is similar to the Phelps type, with the lock case on the inside of the bow and is distinguished by the position of the keyhole at the bottom of the lock case. This keyhole position proved to be awkward, making it difficult to unlock the handcuff. The second model has the keyhole in the front of the lock case and the third model has the further improvement of a double locking facility (Fig.2). This double locking is with the key via the keyhole. Leg-irons are larger versions of the handcuffs, with a longer chain linkage and are only found in the first and third model forms (Fig.3). Later came a variation of the handcuff linkage, replacing the simple three link chain with a swivel.

Various combinations sets were made such as handcuffs and leg-irons, three shackles together and handcuffs with a 25cm (9-10 inches) bar linkage. There is even a ball and chain pattern leg iron. Some later handcuffs incorporate a special spring-loaded stop mechanism (Fig.4). This prevents the handcuffs from locking whilst being carried in the pocket and is easily deactivated in order to apply them.

In 1887 the "Detective" model¹ was patented, which is a lighter weight handcuff, having a much smaller lock case (Fig.5). This lock case is positioned on the outside of the bow, like the Adams handcuff. A later variation has a swivel link instead of the three ring chain linkage. Leg-irons were made (Fig.6) and these could also be had in a combination set with the handcuffs, or with a ball and chain.

In 1909 the Tower "Bean" handcuff was produced (Fig.7a & 7b). It closely resembles the Bean/Cobb handcuff but can be differentiated by the position of the anti-locking button which is on the side instead of the front of the lock case and also by the barrel key.

A most unusual design of handcuff was patented by KAHLKE in 1892, an adjustable eight's type, but its shape may better be described as a heart.² This was assigned to Tower but does not seem to have been put into production.

The UNION HARDWARE Co. produced a version of the clog shackle (Fig.8). This is designed to be padlocked onto a prisoner's leg. It allows walking, but running will cause the shackle to spin round the leg and trip the prisoner.

1. Also known as the "Pinkerton" model. These became very popular and as a result, in the 1920s an imitation was brought out. See the Miscellaneous section later in this chapter.
2. See Reproductions section in the Miscellany II chapter for the one made by Ian McColl.



Figure 1. First model handcuff (note keyhole position) (The Royal Armouries, Leeds).



Figure 2. Third model handcuffs.



Figure 3. Third model leg-irons.



Figure 4. Standard handcuffs with the anti-locking stop (Chris Gower Collection).



Figure 5 "Detective" or "Pinkerton" model handcuffs (Chris Gower Collection)



Figure 6. "Detective" model leg-irons (Jon Oliver Collection).

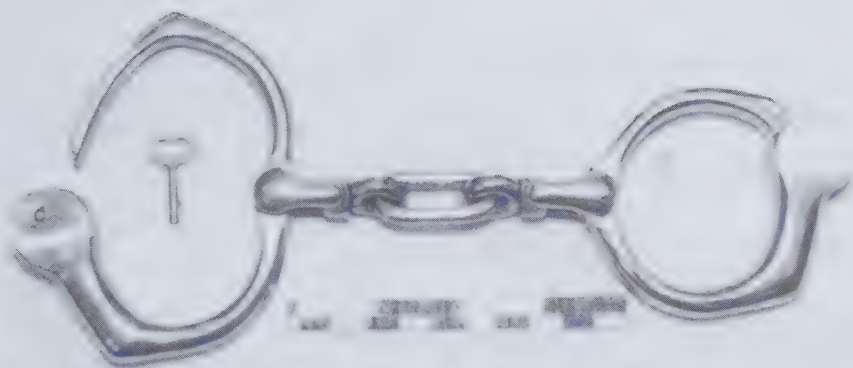


Figure 7a. "Bean" model handcuffs (West Midlands Police Museum, Birmingham).



Figure 7b. Position of anti-lock button shown on another pair of "Bean" model handcuffs (Chris Gower Collection).



Figure 8. "Clog" leg restraint (Chris Gower Collection).

8. BALCO.

The status of this firm is difficult to determine. It seems only to have produced leg-irons (Fig. 1) and these are almost identical to those made by Tower. They differ in having the chain linkage made of round links instead of the bent links so typical of Tower items. The keyway is also slightly smaller. Just when they were made is another uncertainty, but Tom Gross¹ suggests that it was after the normal Tower makers went out of business.

1. See his book *Manacles of the World*.

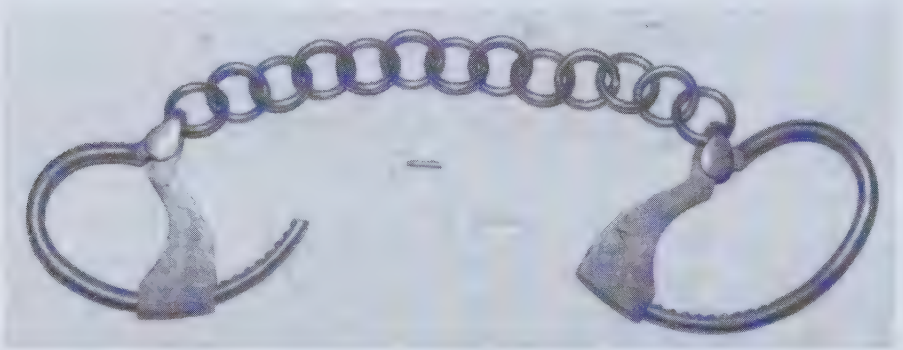


Figure 1. Standard leg-irons (Chris Gower Collection).

9. PALMER

The products of this company are most unusual. They resemble items used in the building trade, like scaffold pole brackets. In 1876 James C Palmer, said to be of the U.S. Navy, patented this shackle. It consists of a simple round ring formed of three pieces of curved metal joined by two hinges (Fig.1). The rings are closed in such a way that one has a "male" fitting which engages the "female" fitting in the other (Fig.2). The lock is very simple, a spring loaded pawl in the lock in the "female" half engages a round furrow cut in a short rod in the "male" piece. This is unlocked by the insertion of a screw-in key, which is then pulled to open the lock. Double locking is by means of a grub screw, on the opposite side of the lock from the keyhole, turned into place by the triangular other end of the key. A chain with ends matching the shackle locks can be inserted.¹ The shackles have five sizes, from small handcuff to leg-iron.

1. See the replica illustrated in the Reproduction section of the Miscellany II chapter later.

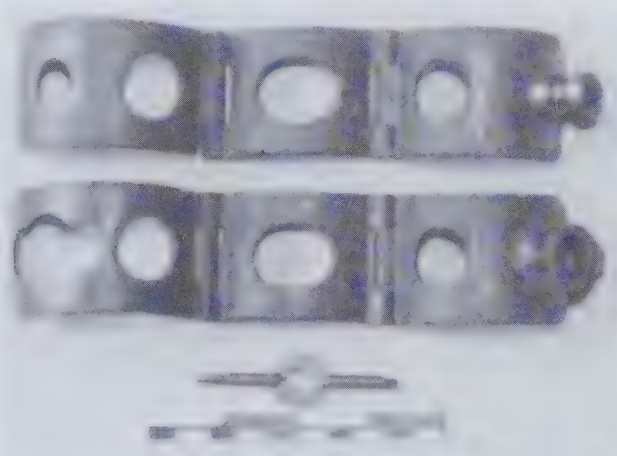


Figure 1. # 1 size shackles opened (Chris GowerCollection).



Figure 2. # 1 size shackles assembled (Chris Gower Collection).

10. MARLIN DALEY.

The Marlin company is a firearms manufacturer, one of several in the U.S.A. which also make, or have made restraint equipment at various times. Late in the nineteenth century for a few years it manufactured a handcuff patented by Daley in 1879 (Fig.1). The handcuff is known by its popular name, the "bottleneck" pattern. This refers to the distinctive shape of the lock case which looks rather like the neck of a bottle. The lock is an ingenious design with a double set of pawls which engage ratchets on both sides of the bow. The original linkage is a simple three link chain, later models have a swivel linkage (Fig.2). A triple shackle version of the first model was also made.

For some reason,¹ the company resumed production of the handcuff in 1911 until the U.S.A entered World War I, when the need for its guns outweighed all other considerations. The handcuffs of the second production period differ from the original model, having slightly finer lines.

1. It is generally thought that it was because the similar handcuff invented by Caveney came out in 1910.

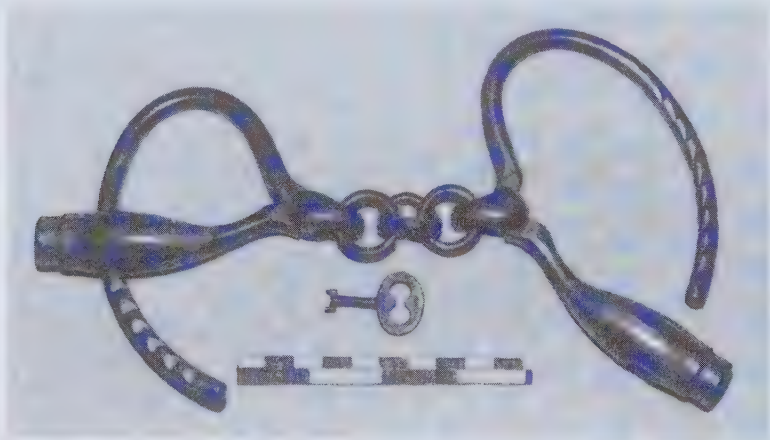


Figure 1. Three ring linkage model handcuffs (Chris Gower Collection).

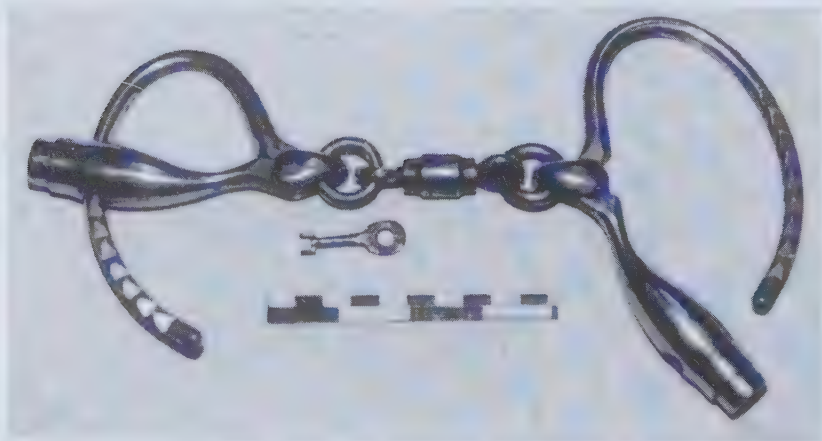


Figure 2. Swivel linkage model handcuffs (Chris Gower Collection).

11. WALTON, ROMER & CO.

In 1880 H Ahrend patented handcuffs of a singular design, which look rather like two padlocks with a simple chain linkage. This company manufactured the handcuffs and marked it with its name. However the handcuffs have generally been known as "Romer" handcuffs. The shackle is non-adjustable so comes in two sizes (Fig.1). Leg-irons were made and they too come in two sizes (Fig.2).



Figure 1 Two standard sizes of handcuffs (Jon Oliver Collection)



Figure 2 Size 1 leg-irons (Jon Oliver Collection).

12. BEAN.

This famous company first produced handcuffs in about 1882. The first model is an adjustable handcuff, whose ratcheted bow enters the lock case but does not lock until a push button on the side of the case is activated. This allows the user to keep the handcuff safely in a pocket but ready for immediate use, the first time this was available.¹ The first models were the “Patrolman” (Fig.1) and the slight larger “Prison” (Fig.2) pattern. Leg-irons were also made which are simply an enlarged version of the “Prison” pattern handcuff, but without the anti-locking buttons (Fig.3).

Handcuff variations, such as the “Conveying Handcuff” (a version of the “Patrolman” with an 8 inch [20 cm] chain linkage) and a triple shackle, which has the extra shackle attached with an eight ring chain. A single shackle with a looped chain attached, for use similarly to the triple handcuff, by putting an ordinary pair of handcuffs through the loop. The most unusual variant had two handcuff shackles, each attached by means of a seventeen ring chain to a collar (Fig.4). This collar is a very large version of the handcuff shackle.

Leg irons were made attached to a ball by a chain 6 feet (1.8m) long, either singly or as a pair. The ball could be of 12, 18, 25, 35 or 50 pounds (5.5 – 23 kilograms). The company also made connecting chains which were about 18 inches (45 cm) long overall, with a 6 inch (15 cm) loop in each end. These can be used to connect handcuffs to leg-irons, or two prisoners via their handcuffs etc.

In 1887 the Bean “Giant” handcuff, famously used by Houdini, was patented. It is a solid state “eights” pattern handcuff with ratcheted bows that close into the lock case on opposite sides (Fig.5). If put on correctly, it is almost impossible for a prisoner to open this handcuff, even with the key.

IVER JOHNSON, a firearms manufacturer, also produced handcuffs almost identical to the “Patrolman” type (Fig.6). These were made under their own patent dated 1884.. The lock uses fang-tooth locking pawls instead of the usual Bean dead bolt type. It also made Bean “Giant” handcuffs.

LOVELL ARMS Co. also made a similar handcuff to the “Prison” pattern, though it has a different keyway, using a flat key (Fig.7).

In 1899 improved models of the handcuffs, both standard and long chain versions and leg-irons were patented by Lyman Cobb and these became very popular.² The design is very neat and retains the anti-locking button. The main improvement is that the lock can easily be removed from its case by the undoing of a small screw when the shackle is open. This allows for cleaning, repair or replacement.

1. But Tower brought out their “stop” in the same year, see above.

2. Later, these models were produced under licence by Harrington & Richardson, see later entry.



Figure 1. "Patrolman" handcuffs (Yossie Silverman Collection).



Figure 2. "Prison" handcuffs (Yossie Silverman Collection).



Figure 3. Standard leg-irons (Yossie Silverman Collection).



Figure 4. Collar and cuffs restraint (Yossie Silverman Collection).

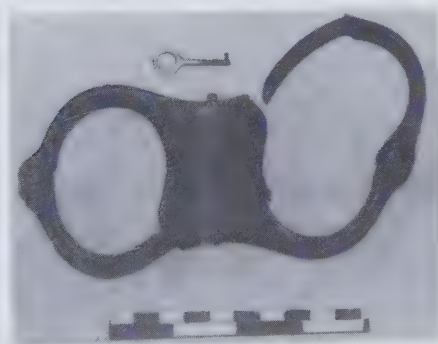


Figure 5. "Giant" handcuffs (Chris Gower Collection).



Figure 6. Iver Johnson "Bean" handcuffs.

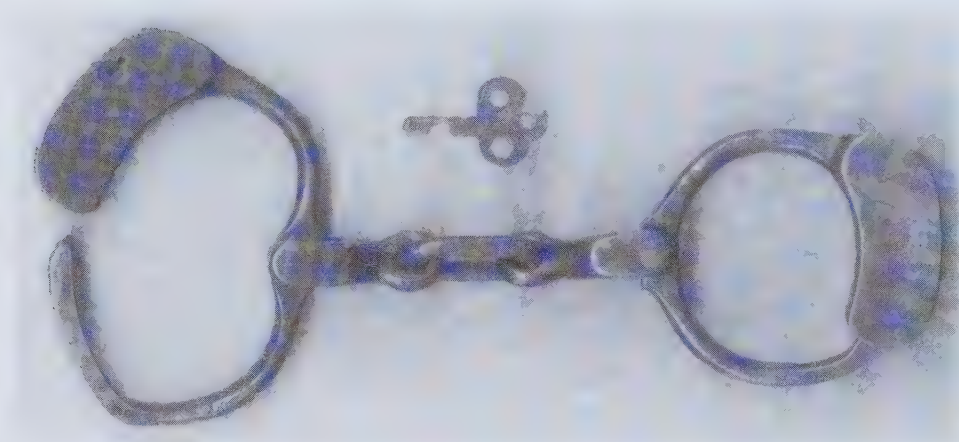


Figure 7. Lovell handcuffs (Chris Gower Collection).

13. CUMMING.

These handcuffs (Fig.1), patented in 1899, are rather like the later Bean model, but fitted with gripping levers on the shackle on either side of the hinge assembly. This was designed to make the handcuff easier to open for use. The anti-locking button is larger than on the Bean types and positioned farther from the lock case.

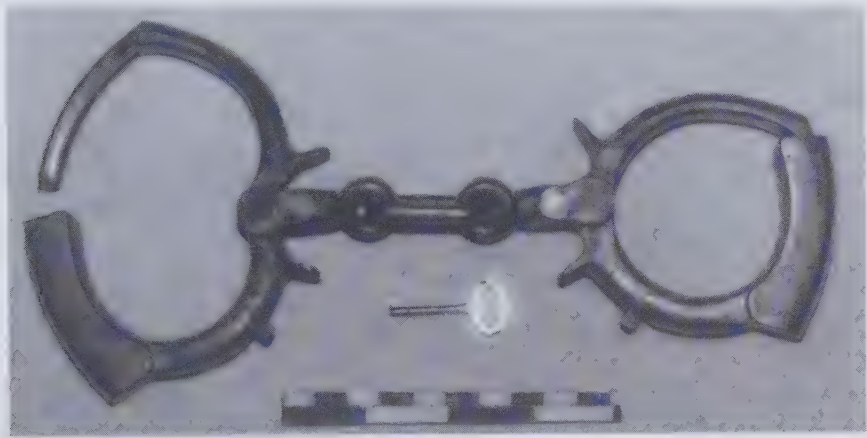


Figure 1. Standard handcuffs (Chris Gower Collection).

14. CARBERRY.

What appears to be a development of the Cummings design are the handcuffs (Fig.1) patented by J.F.Carberry in 1912. They look very much like Cummings handcuffs without the gripping levers.



Figure 1. Standard handcuffs (Stan Willis Collection).

15. JUDD/MATTATUCK/MALTBY.

These three brands of restraint are classed together as they were all manufactured by the same company, the Mattatuck Manufacturing Co. Connecticut. This company started operations in about 1900 and appears to have ceased business soon after World War II. All three brands of restraint that it produced share a common feature, that is, when the shackle is unlocked with the key, the locking mechanism is de-activated until the shackle is opened to its fullest extent. That re-activates the lock, so that when the shackle closes over a limb, the pawls in the lock engage the ratchets on the bow.

The earliest products were the Maltby handcuffs, with patents in 1901 and 1904. These are of what is probably an unique design in that they are made with a spring loaded trigger mechanism. The handcuffs have a trigger placed in such a position that, when a wrist is introduced into the shackle and pressed against it, the shackle snaps shut. Two models exist, differing in the keyways, one having a round key (Fig.1) and the other a flat one (Fig.2). Both models have two forms, standard and lightweight. A bar linkage model and a triple cuff set were also made.

A couple of years later came the Judd brand, with patents in 1903/4 (Fig.3). At first sight these look like the Tower types but the chain linkage is attached to the lock case differently. Also made were triple shackle and bar linkage forms of the handcuffs. The leg-irons are larger versions of the handcuffs with a longer chain (Fig.4).

Mattatuck restraints came next and these differ from the Judd types by having a more complicated locking mechanism (Fig.5). This mechanism incorporates a double lock facility, but is rather tricky to use and if insufficient care is taken, the lock is very easily jammed. The leg-irons have a most unusual twist pattern chain linkage and are rare, only about ten pairs are known to exist (Fig.6).



Figure 1. Maltby handcuffs, round key pattern (Yossie Silverman Collection)



Figure 2. Maltby handcuffs, flat key model (Chris Gower Collection).

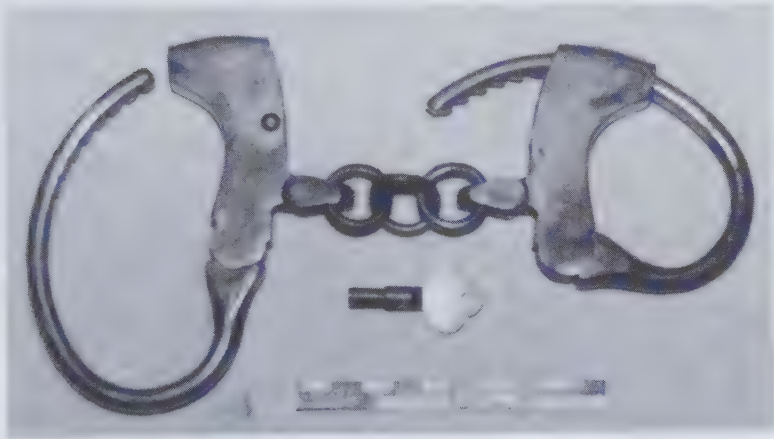


Figure 3. Judd handcuffs (Chris Gower Collection).



Figure 4. Judd leg-irons (Yossie Silverman Collection).

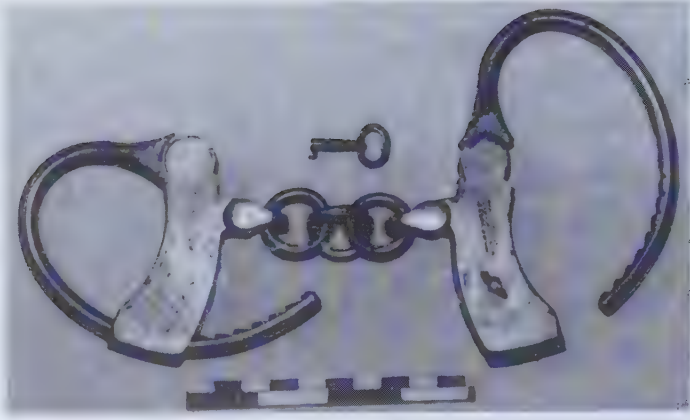


Figure 5. Mattatuck handcuffs (Chris Gower Collection).



Figure 6. Mattatuck leg-irons (Jon Oliver Collection).

16. CAVENEY.

The Caveney "Bottleneck" pattern handcuff (Fig.1), said to have been patented by a policeman in 1910, bears a superficial resemblance to the Marlin-Daley handcuff discussed earlier. It is however quite different, despite the similar shape of the lock case. There is only one series of ratchets on the inside of the bow and the keyhole is round instead of propeller shaped. The key has to be screwed onto a stud in the lock until it is tight enough to turn the mechanism and unlock it. It can also be double locked with the key via the keyhole.



Figure 1. "Bottleneck" handcuffs (Chris Gower Collection).

17. PEERLESS.

When George A. Carney invented the swinging bow handcuff, which he patented in 1912, the Peerless company acquired the rights to manufacture it. However, the company did not have the necessary machine tools, so Smith & Wesson, the gun makers were contracted to make it.¹ The first Peerless models are marked with the firm's trademark and also that they were made by Smith & Wesson.

The first model double locks with the key via the keyhole with a 180° turn of the solid key whose tip locates in a hole in the lock case (Fig.1). The linkage is with two rings between swivels. The second model has a similar key, but is double locked by depressing a plunger via a small hole in the top of the lock case, using the key tip (Fig.2). The linkage consists of a single elongated chain link between swivels on each shackle. The third model has a barrel key and uses the current double locking method, a pin on the key handle is used to depress the plunger. It also has two chain rings in the linkage. Later models are similar, but with a narrower lock case (Figs.3,4 & 5).

Peerless leg-irons are scaled up forms of the handcuff with a longer chain linkage (Fig.6), but a version is made which has normal handcuff linkage, designed for use as large handcuffs (Fig.7). An extra large leg-iron model, designed to go on a prisoner over boots is also available (Fig.8) Also made is a belly chain pattern, normal handcuffs attached to a waist chain in such a way that the hands are held at either side of the body. A hinged model handcuff (Fig.9) is produced which has a peculiar linkage, three links sets, so made that the middle links set operates inside the outer pair rather like a motor cycle chain.

The W. S. DARLEY company made a copy of the Peerless second model in the early 1940's for about two years, until it was successfully sued by Peerless for breach of copyright (Fig.10). A distinguishing feature is that the middle lamination block in the lock case is made of brass.

1. This arrangement may have lasted until about 1940. There is a record of a firm called BEMIS & CALL making the handcuff from then until 1950. The author has been unable to find confirmation however. Some people are of the opinion that Peerless have never made its own handcuffs, but have always contracted out their manufacture to other firms.

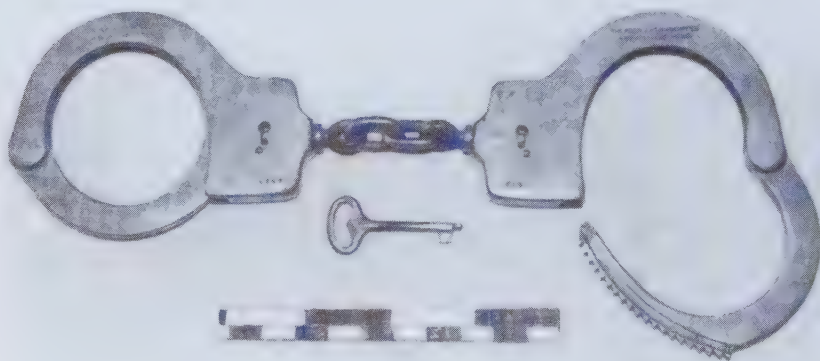


Figure 1. First model, the original swinging bow handcuffs (Chris Gower Collection).



Figure 2. Second model handcuffs.

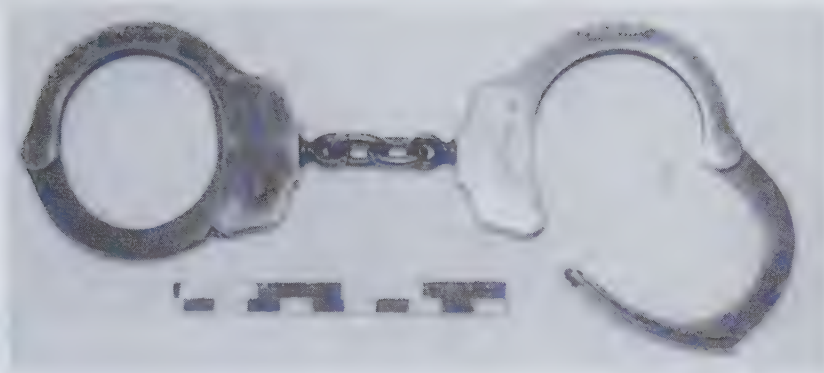


Figure 3. Early model 300 handcuffs (The Royal Armouries, Leeds).



Figure 4. Model 300 handcuffs.



Figure 5. Model 500 handcuffs (note the different swivel) (Chris Gower Collection).



Figure 6. Model 303 leg-irons.



Figure 7. Model 303 short chain linkage leg-irons for use as large handcuffs.



Figure 8. Extra large leg-irons, model 505 (these shackles are not as large as those of the American Handcuff Co. listed later) (Chris Gower Collection).



Figure 9. Hinged linkage handcuffs. "blued steel" finish.



Figure 10. Darley handcuffs (Chris Gower Collection).

18. SMITH & WESSON.

After Peerless set up its own manufacturing plant, the Smith & Wesson company brought out its own versions of the Peerless type restraints (Fig.1).¹ Generally the handcuffs are very little different to the originals and have satin nickel or “blued steel” finish. The first high security model 94 handcuff has a much more secure key and locking system and is found in three forms (Figs.2,3 & 4). The later model 104 high security model has a less complex lock, but still cannot be opened with a standard key and is not so easy to pick (Fig.5).

Double locking on the earlier models is via a small hole in the top of the lock case. In the later models it is via a slot on the front of the lock case in the first form (Fig.6) and the second form has the slot accessible from both sides (Fig.7). Beside the usual “blued” steel and nickel plated finish, there are stainless steel versions and, with the earlier types, a very lightweight aluminium alloy model, claimed to be the lightest handcuff ever made (Fig.8).

The first hinged pattern handcuff, model 200, has a similar rigid type of hinge to that in the Spanish Alcyon type illustrated earlier (Fig.9). This handcuff remained in production only for a very short time in the 1980’s. The second hinged pattern, has a more flexible triple design and folds flat both ways (Figs.10 & 11). The model 1 handcuff (Fig.12) of the late 1990’s has a larger bow than usual so that it has a much wider range of sizes, from smaller to bigger than norm, the latter being slightly larger than the Hiatt “De Luxe” models. Its double locking method has reverted to the type with the hole on the top of the lock case.

The firm’s model 1900 leg-irons are not just scaled up versions of their handcuffs but have a different, more oval shape (Fig.13). The model 110 leg-iron is also available with a short chain linkage for use as large handcuffs (Fig.14). Very briefly a hinged model 210 was made, with the first type of rigid hinge. Handcuffs are available attached to a belly chain, the standard model 1800 (Fig.15) having the shackles attached to the chain with a few links, so that the wrists are held at the sides. Variations of this restraint and various kinds of lead chain handcuffs, depending on customers’ requirements, can be supplied to order.

1. It is possible that this was about 1940, see the footnote to the Peerless Co. entry above.



Figure 1. Model 90 handcuffs in “blued steel” finish with first type of box.

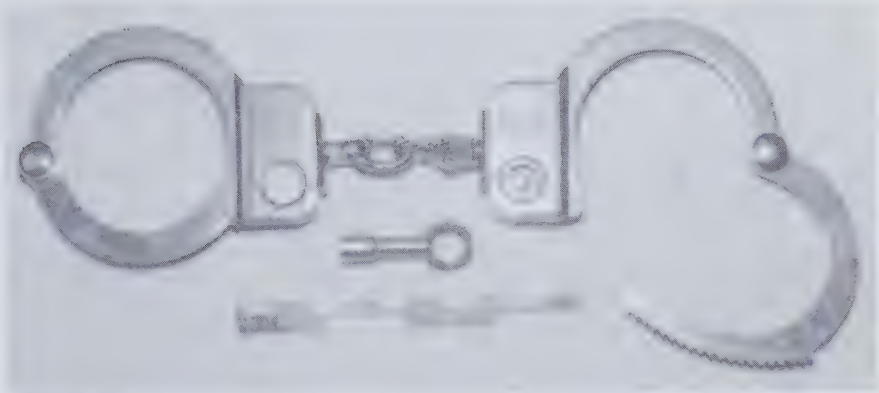


Figure 2. Model 94 high security handcuffs, first form. Only one type of shackle and the hinge has raised rivet heads (Chris Gower Collection)

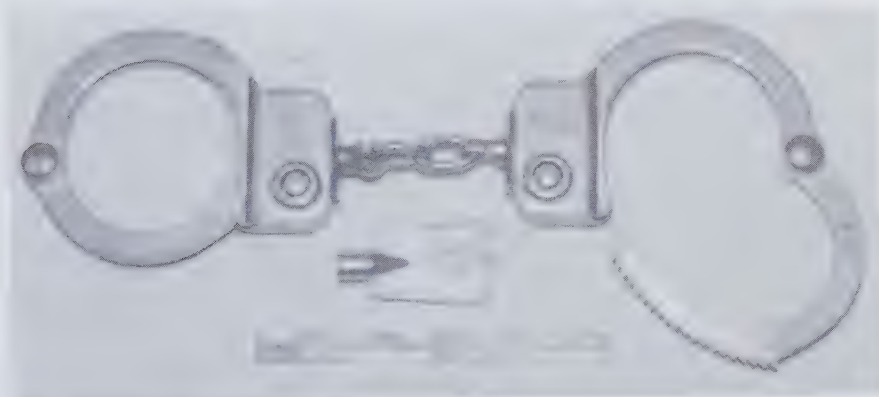


Figure 3. Model 94 high security handcuffs, second form. There are left and right shackles and raised rivet heads (Chris Gower Collection).

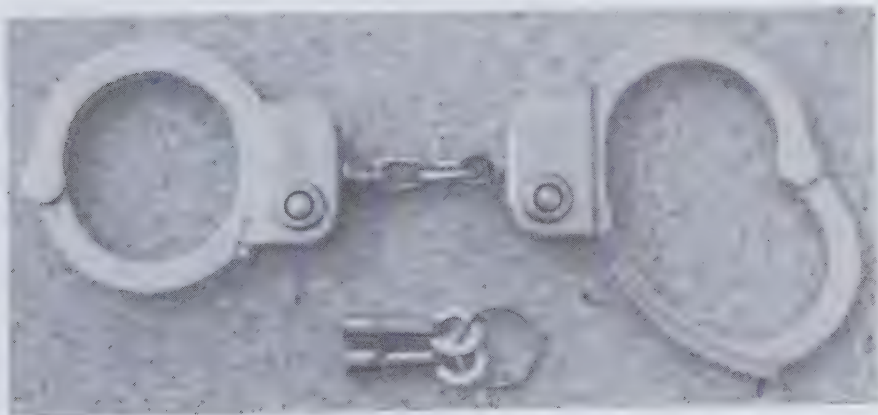


Figure 4. Model 94 high security handcuffs, third form. There is a left and right shackle and the hinge rivets are flush.



Figure 5. Model 104 high security handcuffs with second type box.



Figure 6. Model 100 handcuffs, first form. The double lock slot is only accessible on the keyhole side of the lockcase. Marked PATENT PENDING.



Figure 7. Model 100 handcuffs, second form with the double locking slot accessible from both sides of the lock case ("blued" steel finish).



Figure 8. "Airweight" model, lightweight handcuffs.

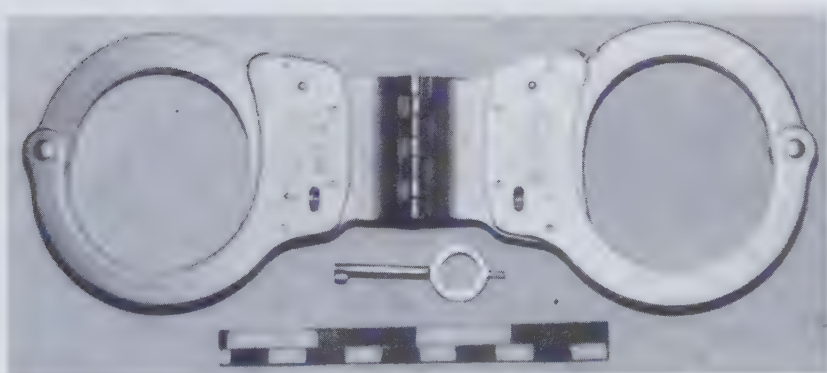


Figure 9. Model 200 hinged handcuffs (Chris Gower Collection).



Figure 10. Model 300 hinged handcuffs, first form with double locking via slot in the front of the lockcase.



Figure 11. Model 300P, hinged handcuffs, second form with double locking via hole in top of lockcase (Chris Gower Collection).

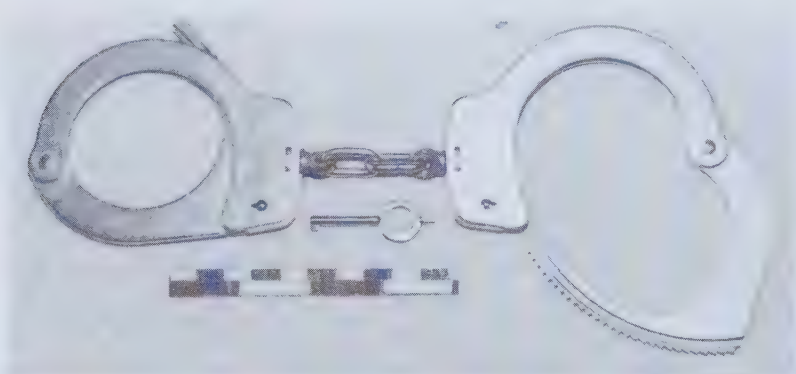


Figure 12. No.1 model handcuffs (note the enlarged jaw).



Figure 13. Model 1900 leg-irons.

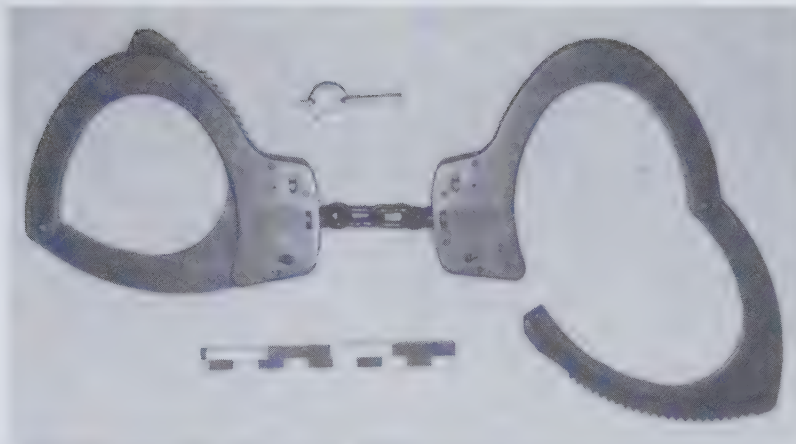


Figure 14. Model 110 leg-irons with short chain linkage for use as large handcuffs.



Figure 15. Model 1800 handcuffs and belly chain.

19. HARRINGTON & RICHARDSON ARMS Co.

This is another gun manufacturing firm, founded in 1871. Its best known handcuff is the model 123, generally known as the “H & R Super” handcuff, patented in 1934 (Fig.1a).¹ This is a Peerless type, but of a different pattern to the usual version, being a very solidly built handcuff. It must be one of the strongest and best made Peerless models ever produced. It has a most unusual round keyhole which is hidden in the linkage (Fig.1b) so that to a casual inspection there appears to be no keyhole at all! There are several slight variations. Models exist with and without the groove in the bow which prevents the shackle from being wrenched apart sideways. The model with the groove is the later one. There are also two slightly different clevis types in the linkage, which commonly has two rings, but four ring versions exist. There is also said to be a non-swinging bow variant.

Leg-irons, an enlarged version of the handcuff, with a long chain linkage, were produced. This was on a very much smaller scale so they are relatively rare (Fig.2).

This firm also made Bean/Cobb handcuffs (Figs.3 & 4) and leg-irons (Fig.5) for a time under licence and these are clearly marked HARRINGTON & RICHARDSON. They also produced and advertised the RUTTIMAN handcuff, but probably made only a few prototypes.

1. There is an identical Finnish handcuff which was patented in 1928, see the Finland section above and also the China section later.

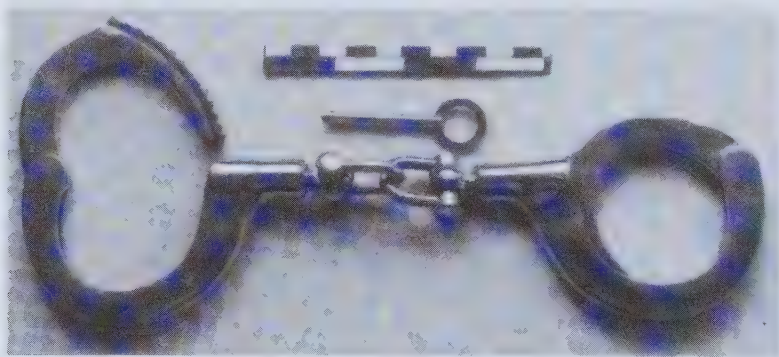


Figure 1a. Model 123 “Super” handcuffs.



Figure 1b. Keyhole position.



Figure 2. "Super" model leg-irons (Yossie Silverman Collection).

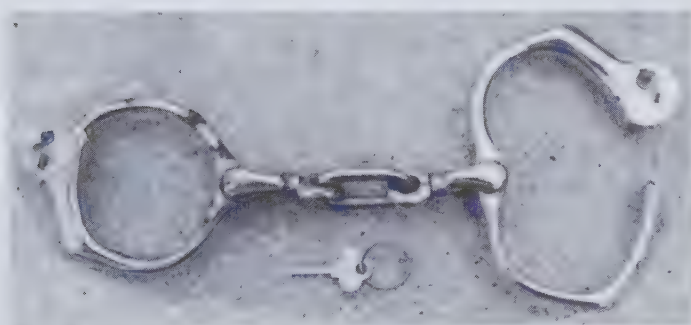


Figure 3. Bean "Lyman Cobb" handcuffs.



Figure 4. Bean "Lyman Cobb" handcuffs, "New Improved" model (note the heavier linkage and no swivels) with original box (Chris Gower Collection).

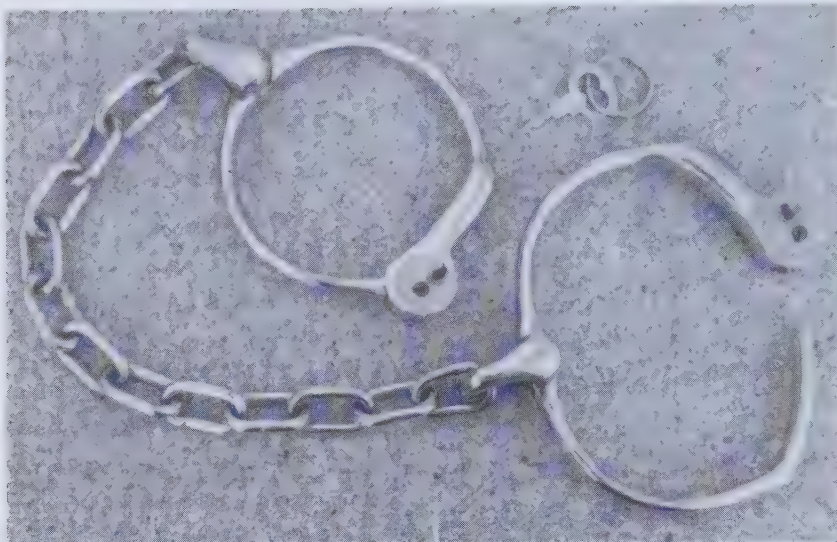


Figure 4. Bean "Lyman Cobb" leg-irons.

20. HARVARD LOCK Co.

It is said that this Company produced its restraints for use by the U.S. armed forces during World War II. Typical Peerless type handcuffs (Figs.1 & 2) and leg-irons (Fig.3) were made and usually have a "blued" steel finish. The keys are a little larger than the standard ones. There is an improved later model nickel plated handcuff, which was sometimes supplied fitted with a belly chain.



Figure 1. First model handcuffs (Chris Gower Collection).



Figure 2. Second model handcuffs (note the grooved jaw) (Chris Gower Collection).



Figure 3. Standard leg-irons (not original key – copy made by Ian McColl).

21. STRAUSS

This is another firm which seems to have produced restraints for wartime use, similar to those of the previous company, but of poorer quality. Handcuffs (Fig.1) and leg-irons (Fig.2) were made and are easily recognisable because of the “Hammerite” type enamelled finish.

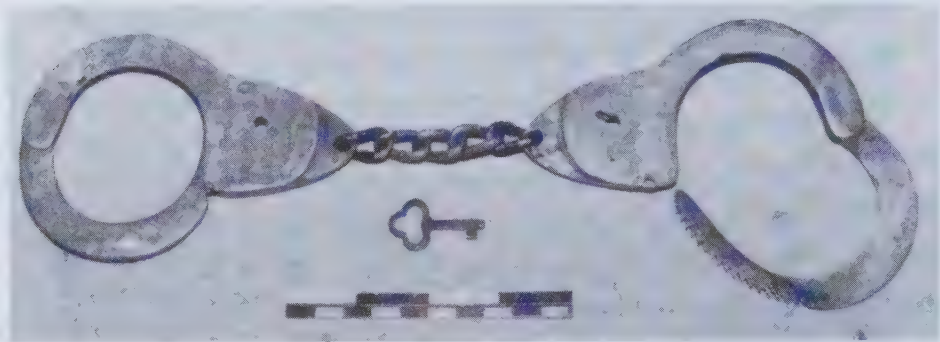


Figure 1. First model handcuffs (second model is a smaller version of the leg-irons) (Chris Gower Collection).

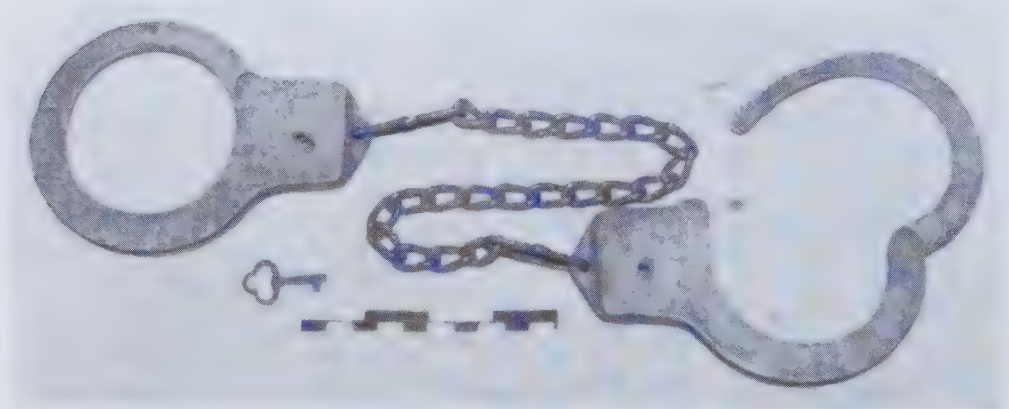


Figure 2. Standard leg-irons (Chris Gower Collection).

22. WALDEN TOOL Co.

This company's well known "Waldenlock Handcuff", popularly known as the "Lady Cuff", is very unusual (Fig.1). At first sight it could be taken for a toy, but its construction is considerably stronger than its appearance suggests. Also, its locking mechanism is as secure as the usual Peerless types. It is said to have been designed for female detectives to carry in their handbags.



Figure 1. Standard handcuffs (Chris Gower Collection).

23. BOCKIN

A handcuff was patented by W.Bockin in 1924 which is an unusual Peerless type in that it has only one complete cheek plate to the lock case (Fig.1). In consequence, the bow swings beside rather than through the lock case. Leg-irons were also made.

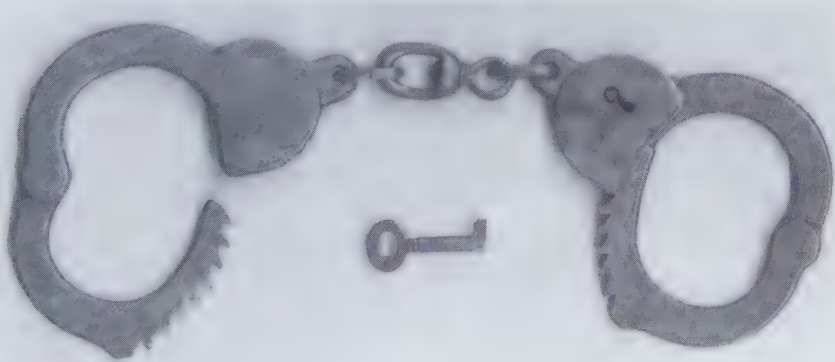


Figure 1. Standard handcuffs (Chris Gower Collection).

There are several patents listed by S.F.Gill, at least one of which was eventually produced as a thumbcuff instead of the originally intended handcuff. U.S. patent number 1,780,473 was for an unusual eights pattern handcuff, a Peerless version of the old “Irish Eights”. This has the disadvantage that, as the hinge is on the side, it does not allow the shackles to keep the same size and shape when the handcuff is being closed. It does not seem to have been produced commercially.

The Gill “Flash Action Manacle” was manufactured and sold by the FLASH ACTION MANACLE Co. in the 1930’s (Fig.1). This was the first solid state Peerless type handcuff on the market. In the place of a chain linkage there is a common lock case, with a single keyhole. It was not copied by a commercially produced model until Dennis Elam brought out the “Quik-Kuf” type fifty years later.

A hinged pattern handcuff was produced in relatively small quantities in the late 1930’s (Fig.2). This looks rather like an ordinary handcuff with the chain linkage replaced with a crude hinge. This model can also be found marked PEACE OFFICER EQUIPMENT Co.

Associated with the Gill items is the HILLYARD manacle. This is another eights type, but the shackles have a common hinge and the single lock case is on one side. It also does not seem to have been commercially produced.¹

1. See the Reproductions section in the Miscellany II chapter later.

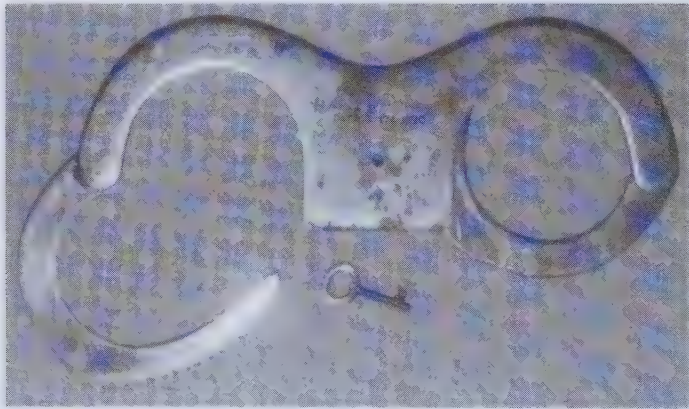


Figure 1. “Flash Action” handcuffs (Chris Gower Collection).

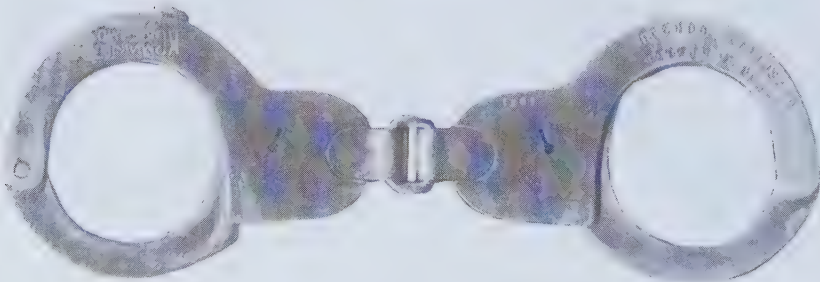


Figure 2. Folding pattern handcuffs (Stan Willis Collection).

25. McKENZIE.

The McKenzie "Mitts" restraint, patented in 1925, must be one of the most unusual restraints ever actually made and used.¹ It consists of a pair of metal mitts which almost completely enclose each hand separately, with the thumb separated from the fingers. There is a short chain to connect the pair. Another short chain on each mitt, attached at one end to a serrated curved bar which enters a lock, serves to provide an adjusting mechanism for various sizes of wrist. There are two locks on each mitt and the key is required to lock as well as unlock the device. Some pairs are equipped with an additional waist chain attachment. It is said that only about two dozen or so pairs were made, the pair used in the illustration is believed to be the only one outside of the U.S.A. Of the twenty known surviving pairs, six are nickel plated and the others have a black finish. The problem with the mitts seems to be that they are too secure, making it impossible for transported prisoners to attend to themselves at all.

1. There is a patent by Belcher & Perrenot dated 1879 for a similar restraint which is even more restrictive of the hands, completely enclosing them. There is no evidence that it was ever actually made.



Figure 1. MacKenzie Mitts, front and back views (Chris Gower Collection).

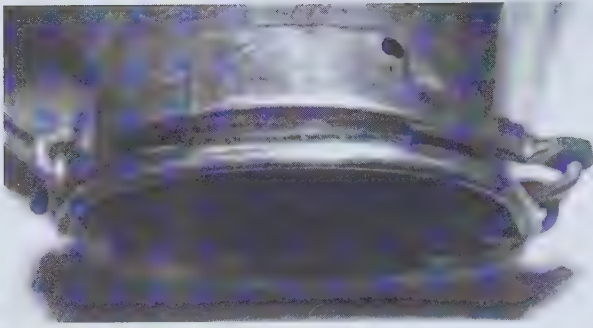


Figure 2. Close view of the adjustment chain lock.



Figure 3. Close view of main lock and adjustment chain.



Figure 4. Close view of a mitt on a hand showing how the chain adjustment works.



Figure 5. The Mitts being worn by their owner Chris Gower.

26. AMERICAN HANDCUFF COMPANY.

This is one of the major manufacturers, having started life as the AMERICAN MUNITIONS COMPANY, based in Chicago, Illinois, early in the 1940's. The first model handcuffs have a peg operated key (Fig.1). The second model, like all subsequent ones, use the commoner post operated key (Fig.2). Both models have the characteristic square shaped lock case. Distinctive also is the key design with a tapered shaft, although recent models use a standard key.¹

In 1962 the company was purchased by TOBIN TOOL & DIE Co., of Fond Du Lac, Wisconsin, which continued the manufacture of restraints as the AMERICAN HANDCUFF Co., though it may not have changed the name immediately.² It has produced several ranges of restraints over the years, all of which continue the distinctive square shaped lock case design. The earliest handcuff is the "Speedmaster" model (Fig.3). Stainless steel and lightweight alloy models are also made. Leg-irons are scaled up versions of the handcuffs with the same distinctive shape (Fig.4). The hinged handcuffs come in two forms. The first has a typical triple hinge assembly (Fig.5), but the other form has a triple universal joint type hinge which allows a small amount of twisting movement (Fig.6). This is done to make injury to the prisoner less likely.

Besides handcuffs and leg-irons, various combination sets are made, handcuffs on a belly chain and handcuff/leg-iron combinations, with one in particular, model L-300 the "Auto Restraint" designed with transport in a motor car in mind (Fig.7). Special handcuff and leg-iron chain combinations for use in chain gangs are made. These consist of two appropriate shackles connected by a much longer chain than the norm. One shackle goes on one prisoner and the other on his neighbour in the gang. This is then repeated down the line until the chain gang is of the required length.

There are two unique items which represent opposite ends of the size scale. Firstly, the model L-600 leg-iron is designed to be 35% larger than standard leg-irons so that they can be used on prisoners wearing work or cowboy boots (Fig.8). Secondly, the model JN-105 handcuff which is made much smaller than the norm by widening the bow to one inch (2.5 cm), designed for use with juveniles (Fig.9). These are the largest and smallest sized leg-irons and handcuffs currently available.

This company also made handcuffs for FEDERAL LABORATORIES INC. (Fig.10) and HARLEY DAVIDSON.

1. See the Keys section of the later Miscellany chapter for a description of this firm's "universal" keys.
2. Handcuffs exist marked AMERICAN MUNITIONS CO. FOND DU LAC.



Figure 1. First model "Munitions" pattern handcuffs (Note the key)
(Chris Gower Collection).

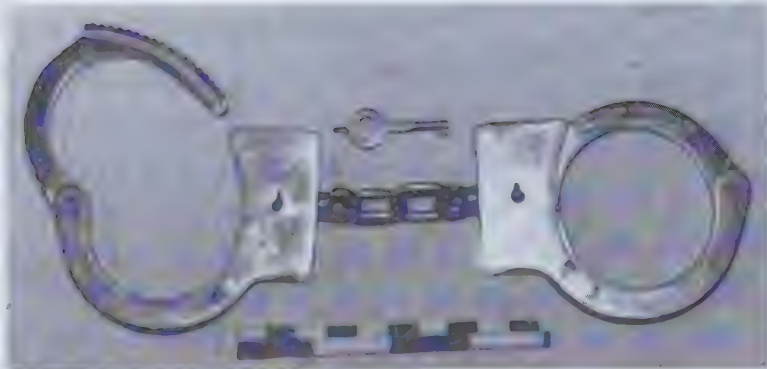


Figure 2. Second model "Munitions" pattern handcuffs (Chris Gower Collection).



Figure 3. "Speedmaster" pattern handcuffs.



Figure 4. Standard leg-irons.

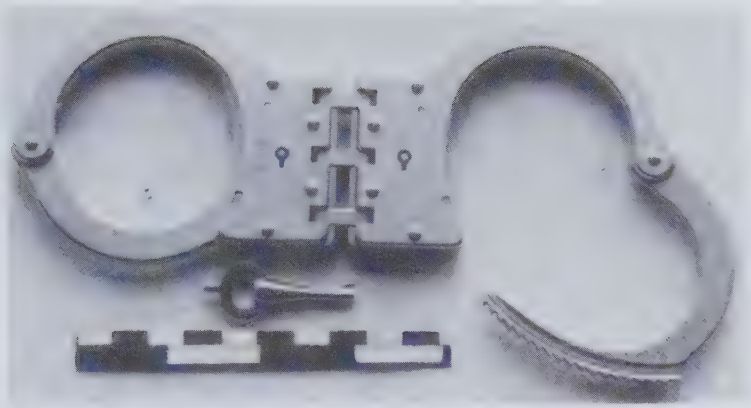


Figure 5. Standard hinged model handcuffs.

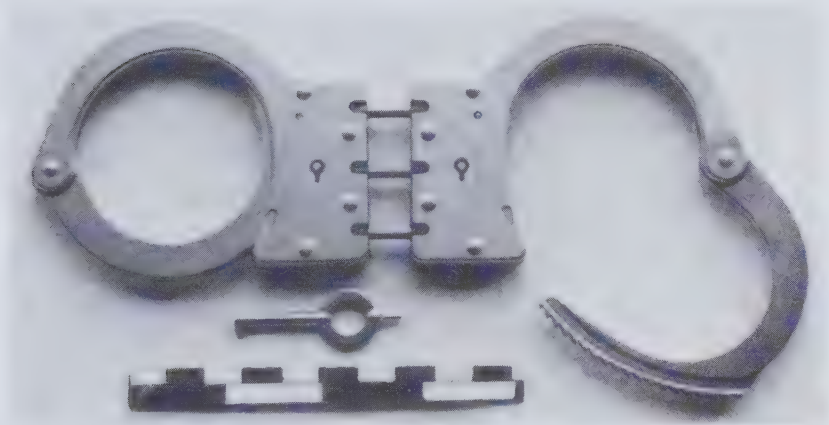


Figure 6. Universal jointed hinge model handcuffs.

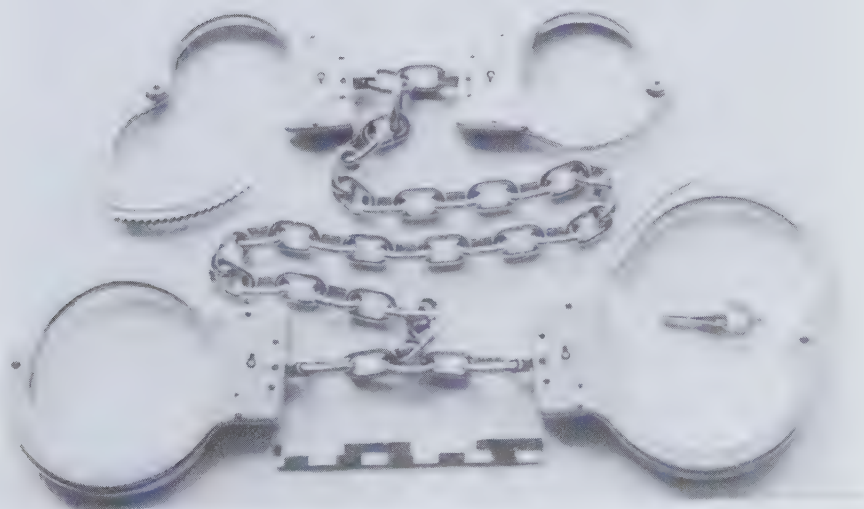


Figure 7. “Auto” restraint, handcuffs and legirons combination set.



Figure 8. Model L-600 "Boot" leg-irons.



Figure 9. Model 4N-105 "Joyenies" handcuffs.



Figure 10. Federal Laboratories handcuffs (Chris Gower Collection).

27. COLT.

Another well-known gun manufacturer which produced a well made Peerless type handcuff of no special distinction (Fig.1).



Figure 1. Standard handcuffs (The Royal Armouries Museum, Leeds).

28. BIANCHI.

This firm is not the well known gun manufacturer, but is a maker and supplier of all kinds of police equipment. In the 1970's it produced a stainless steel Peerless type of handcuff (Fig.1).



Figure 1. Standard handcuffs with original box.

29. CROCKET & KELLY.

This firm produced two models of Peerless type handcuffs, the first patented in 1945. Both models look very much alike, the only difference being the position of the keyhole (Figs.1 & 2). An obvious distinguishing feature is the puffed out construction of the lock case cheek plates, presumably done to strengthen them.



Figure 1. Standard handcuffs, bottom keyhole pattern (Yossie Silverman Collection).

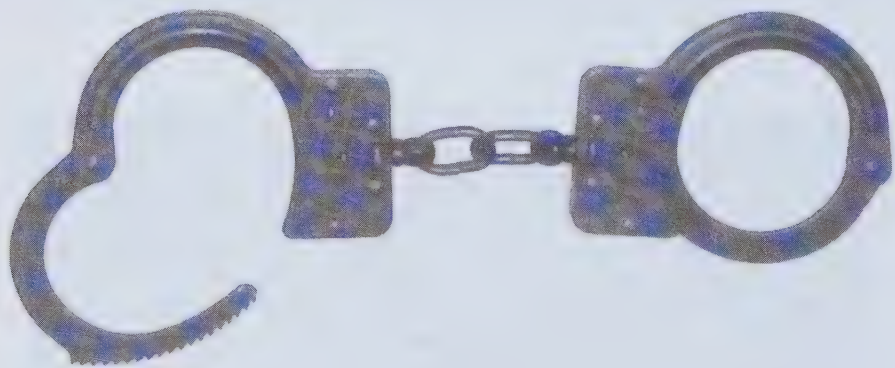


Figure 2. Standard handcuffs, middle keyhole pattern (Yossie Silverman Collection).

30. GUARDIAN HANDCUFF Co. Inc.

This New Jersey company made a Peerless type handcuff, whose only unusual feature is the double locking button (Fig.1). This is merely an extension of the internal rod just sufficiently so that it can be operated by finger pressure. It is undone with the key.

This firm also made handcuffs for J.M.BUCHEIMER Co. (not illustrated) and the SIRCHIE FINGERPRINT LABORATORIES Inc. (Fig.2).



Figure 1. Standard handcuffs (note double locking button, just discernable on top inner corner of lock case) (Chris Gower Collection).



Figure 2. Sirchie handcuffs.

This company, situated in North Hollywood, CA. is another gun maker, L. John Göncz, its owner, told the author that it was particularly well known for supplying guns to the film industry. Since 1996 it has produced a range of good quality restraints bearing the Göncz trade mark, with a design of lock that resists picking, especially the high security versions. The lock has the pawls which engage the ratchets in the bow operated by two springs instead of the usual one. These operate in such a way that a greater force than the norm is required to turn the key and operate the lock. This means that the usual picking agents of bent wire or hairpins do not have the strength to work. This is particularly so with the high security models, because of the little turret (Fig.1) which protects the keyway by lengthening it. The snag in this arrangement is that, if the key is not perfect, its bit can easily be snapped off in the lock.

A distinguishing feature of the Göncz handcuffs is that there are no swivels in the chain linkage, which must be unique in Peerless types. Standard handcuffs have three rings in the linkage (Fig.2), whilst the “semi-hinged” models have just one (Fig.3). There is a hinged model handcuff (Fig.4).

Two pairs of standard handcuffs connected by a 48 inch (1.2m) chain constitute the firm’s “transportation chain”, and another variation is a pair of standard handcuffs attached to a 36 inch (90cm) lead chain, which can also be used as belly chain handcuffs (Fig.5 and front cover picture). All models, except the hinged pattern, are available in ordinary and high security forms. The handcuffs are made with black anodised, nickel plate or stainless steel finishes.

The two models of leg-iron also have no swivel, the normal model has a 12 inch (30 cm) chain linkage (Fig.7 and front cover picture) and the other just three links for use as large handcuffs (Fig.6). The leg-irons have either nickel plate or stainless steel finishes.



Figure 1. High security model handcuffs (note the turret protecting the keyhole).



Figure 2. Standard model handcuffs.

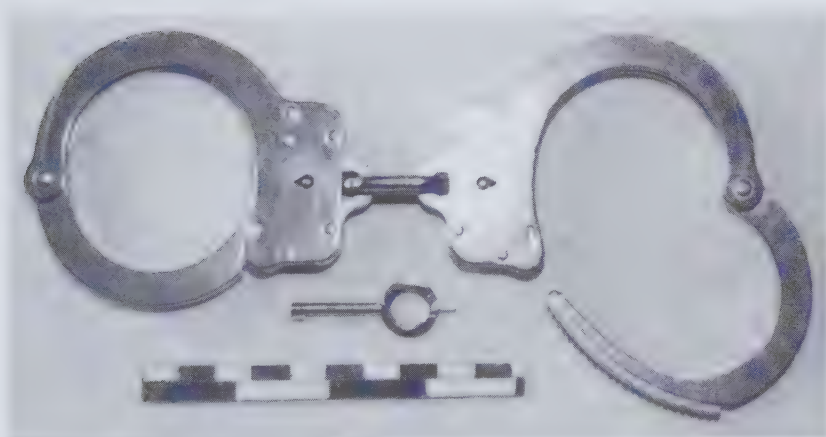


Figure 3. "Semi-hinged" model handcuffs.

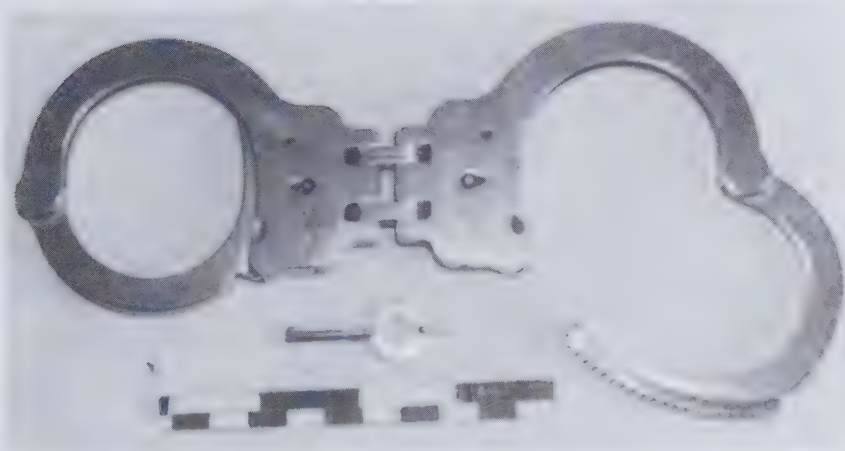


Figure 4. Hinged model handcuffs.



Figure 5. Leading chain and standard handcuffs (see also front cover picture).



Figure 6. Short chain linkage leg-irons for use as large handcuffs.



Figure 7. Standard model leg-irons (see also front cover picture).

32. STURM.

This firm supplies a well made stainless steel hinged handcuff (Fig.1) which has the brand name "Mil-Tec". It is said to have been issued to the U.S. Military Police in the 1980-90's. It closely resembles the Peerless Company's hinged model, although the keyhole is not in the same position, which may imply a different lock mechanism. It has no markings of any kind.

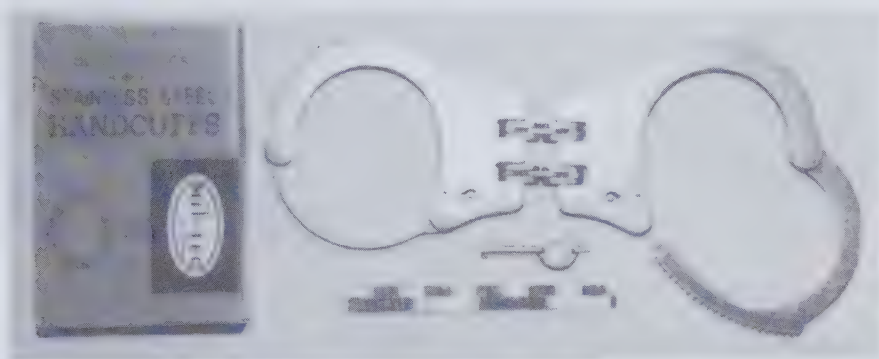


Figure 1. Hinged handcuffs with original box (green in colour).

33. HIATT-THOMPSON.

Since 1985 this company has been the American associate of the British company Hiatt & Co. Ltd. and its products are based upon the range of handcuffs etc. produced in England by the latter firm. In addition to the range on offer in England, Hiatt-Thompson have several additional types. There are belly chain sets, with the shackles either together in the middle or arranged so as to be on either side of the body when applied. A single shackle¹ or a pair of handcuffs attached to a leading chain 4 feet (1.2m) long (Fig.1) are also made, as is a connector chain for coupling handcuffs and leg-irons in a transport set (Fig.2 and back cover picture). The firm also supplies the leg-irons banned in Britain.

Auxiliary restraints are also made. There is a belly chain with a security link at one end (Fig.3 and back cover picture). This link is designed to fit through the security covers which the firm makes, as well as allowing handcuffs to be threaded through on their own. There are two security covers, "Blue Box #1" (Fig.3), which is a device made from very strong plastic and closed with a metal locking piece, which fits over most standard chain link handcuffs. This makes the handcuffs rigid and covers the keyhole. The cover differs from the similar C & S Security Co's model in that it is possible to operate the double locking mechanism after the box has been fitted to the handcuffs. "Blue Box #2" (Fig.4 and back cover picture) is a simple steel version, made to fit over hinged handcuffs.

1. See the Grips and Related Items chapter later.

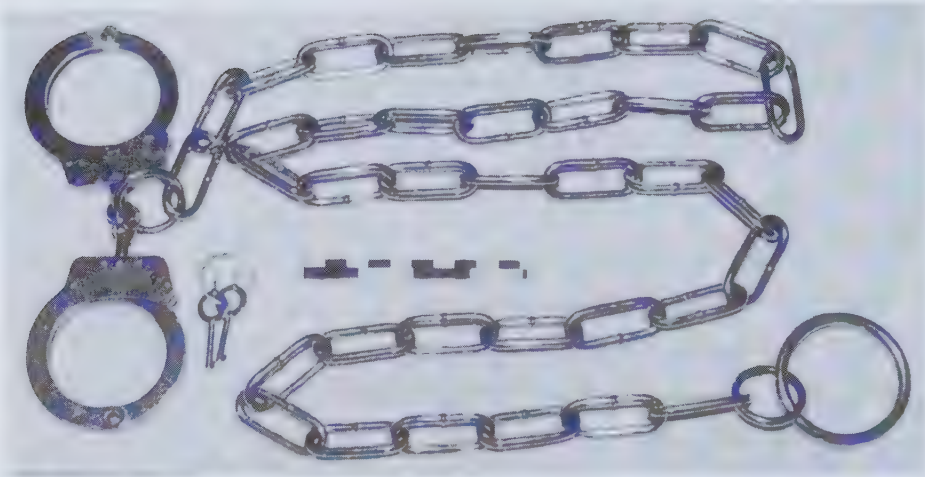


Figure 1. Model 6000 lead chain and handcuffs (Andrew Kerr Collection).



Figure 2. Model 7078 connector chain.

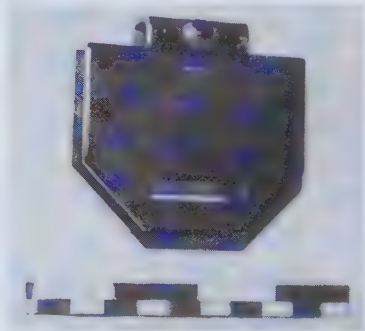


Figure 4. "Blue Box # 2".

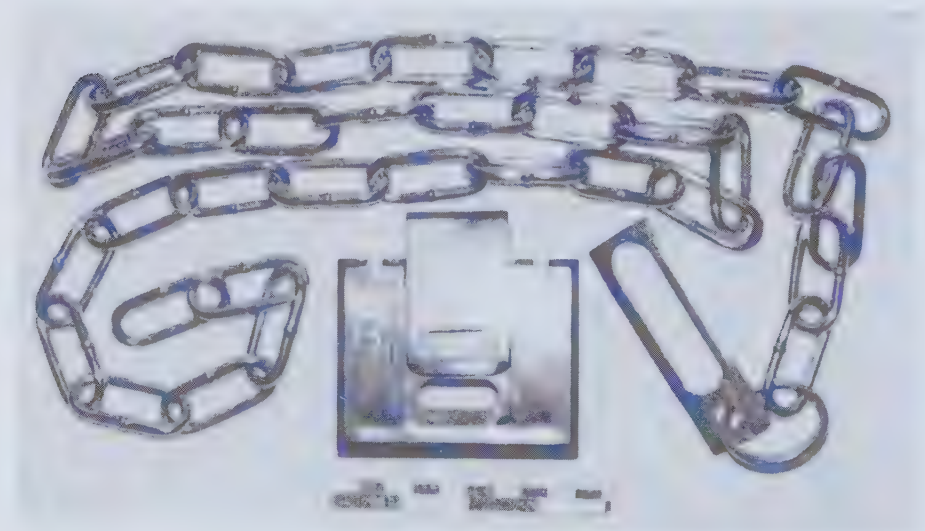


Figure 3. Model 7077 belly chain and "Blue Box # 1".

34. QUIK-KUF.

In 1989 Dennis Elam patented a device, a plastic handle which could be fitted to ordinary chain link handcuffs to convert them into a solid state pattern. He called this the "Quik-Kuf". In 1992 he entered into an arrangement with the British firm Hiatt,¹ probably via the Hiatt-Thompson Co., to supply it with the device. This was fitted to the Hiatt model 2010 chain link handcuff and sold by the Hiatt associates as their "Quik-Kuf". This arrangement lasted less than two years, because Hiatt brought out its own similar "Speedcuff" in 1993. In that year, Elam patented his device in Britain and in 1995 entered into an arrangement with another manufacturer, this time the British firm, Civil Defence Supply. A special handcuff was made in Britain for CDS which has the shackles joined with a bar instead of a chain (Fig.1).² The handles have always been made in the U.S.A. and were exported to Britain for fitting to the shackles. Similarly, the metal handcuffs were imported from Britain to have the handles fitted, for sale in the U.S.A. This is still the situation, but the handles are no longer exported to Britain as CDS now makes its own handle.³

1. See the entry for Hiatt in the earlier Great Britain section.

2. This bar is very strong, the author has seen a pair of these handcuffs twisted a full 360° without breaking and with the shackles still usable.

3. See the entry for Civil Defence Supply in the earlier Great Britain section.



Figure 1. Standard handcuffs.

35. BOA HANDCUFF Co.

The products of this company are most unusual. It seems that originally it intended to produce a handcuff which incorporated a high security Medeco cylinder lock and some prototypes were made (Fig.1).¹ However, what eventually came out in the late 1990's, was a range of devices that can be fitted to most of the handcuffs and leg-irons produced by the American Handcuff Co., Hiatt-Thompson, Peerless (Fig.2) and Smith & Wesson (Fig.3) companies. The device is fitted over the lock case of the restraint and a short key transmits the action of the tumbler lock to the original lock (Fig.4). The device is bolted on with special Allen bolts.² The flaw in the design is that the special Allen keys required to undo these bolts are fairly readily and cheaply available, which was probably not anticipated when these special bolts were first brought out.

1. It is rumoured that the Peerless Co. is going to bring out a handcuff like the original prototype.
2. There are two patterns with different sizes of bolt, the one using the larger bolt is probably the earliest.



Figure 1. Prototype model handcuffs (Yossie Silverman Collection).

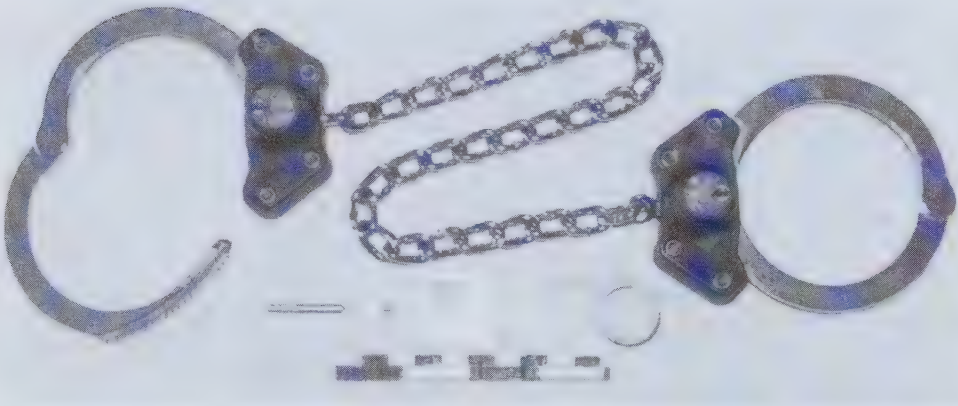


Figure 2. Peerless leg-irons fitted with the security lock (see also the Peerless handcuffs fitted with the security lock in the section on C & S Security below).



Figure 3. Smith & Wesson model 100 handcuffs fitted with the security lock.

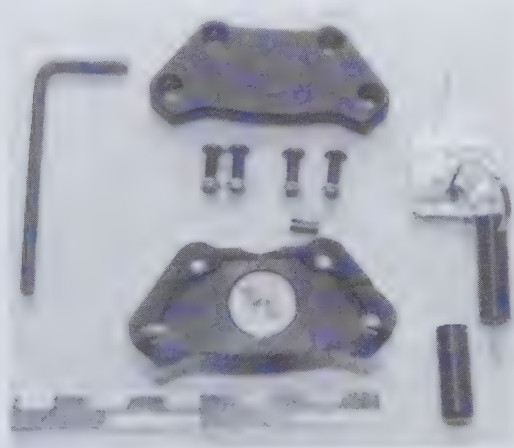


Figure 4. The security lock disassembled (the gadget attached to the key ring is for operating the double lock).

This company manufactures a range of auxiliary security products. The basic products are a chain with a special security link at one end and a security cover, the “Black Box”, invented by J.D.Cullip and K.E.Stefansen and patented in 1973. This security cover is designed to fit over a pair of standard chain link handcuffs after they have been applied to a prisoner and double locked (Fig.1). The security link of a belly chain (Fig.2), fitted snugly around the waist, is then threaded through the box so locking it (Fig.3). The end of the belly chain is threaded through the protruding security link and then secured at the back, out of the prisoner’s reach. It is a great step forward in the production of high security restraints as it makes it impossible for the wearer to get at the keyholes, whilst at the same time holding the hands in a much more secure position.

Variations of chains around this basic idea are available, including some fitted with handcuffs made by other companies (Fig.4). One chain is available as a lead chain, complete with a handle and padlock for securing handcuffs, either alone or with a “Black Box”. Two connector chains are available, one has a ring at one end and a security link at the other (Fig.5), whilst the other has a ring at each end. A gang chain is also available, fitted with security links according to the customers’ requirements (Figs.6a & 6b). Other companies sell similar black box security covers, presumably made under licence.

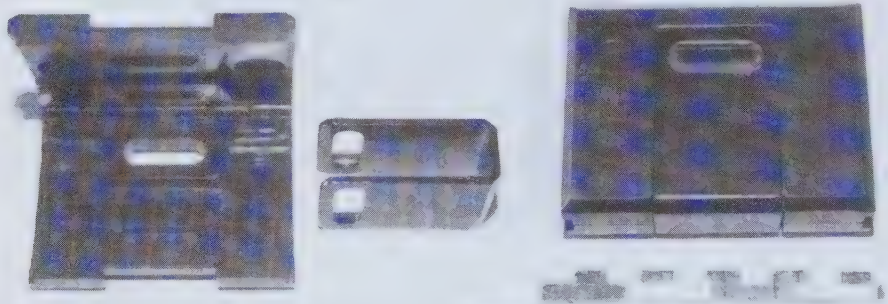


Figure 1. The “Black Box” shown open and closed.



Figure 2. Belly chain with security link.

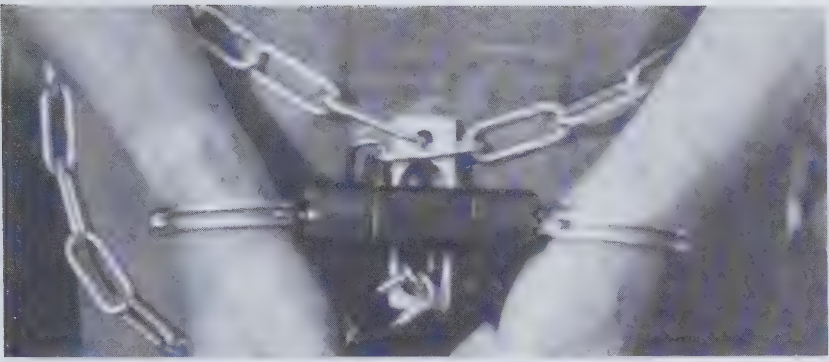


Figure 3. The security cover threaded onto the belly chain.



Figure 4. Belly chain with Peerless handcuffs permanently attached (the BOA security locks were added after purchase).



Figure 5. Connector chain.



Figure 6a. Gang chain fitted with three security links.



Figure 6b. Gang chain in use (the front prisoner is fitted with ordinary chain linkage handcuffs, the middle prisoner is fitted with hinged handcuffs and the rear prisoner is fitted with handcuffs in a "Black Box" security cover).

The “Trilock” range of handcuffs produced by this company and patented in 1992 is probably unique. The handcuffs are made of very tough black plastic material and have a metal lock mechanism which uses standard keys. They are fitted with soft blue plastic liners which can be removed for sterilization in an autoclave. Four models are available, standard chain link (Fig.1), plastic covered steel cable link (Fig.2), metal hinge link (Fig.3) and webbing link (Fig.4). Because only one sort of shackle is made, the hinged models come in two forms, the first with keyholes on the same side so that the shackles open oppositely and the second with keyholes on opposite sides so that the shackles open the same way.



Figure 1. Chain linkage handcuffs.



Figure 2. Cable linkage handcuffs.

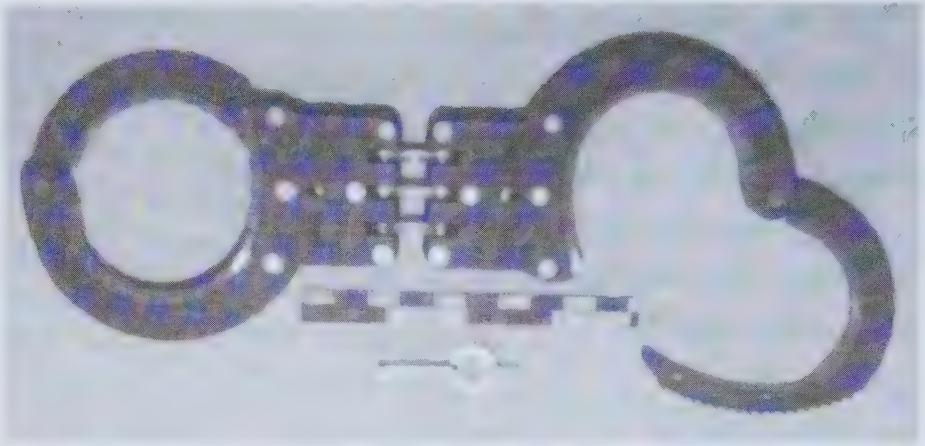


Figure 3. Hinged handcuffs.

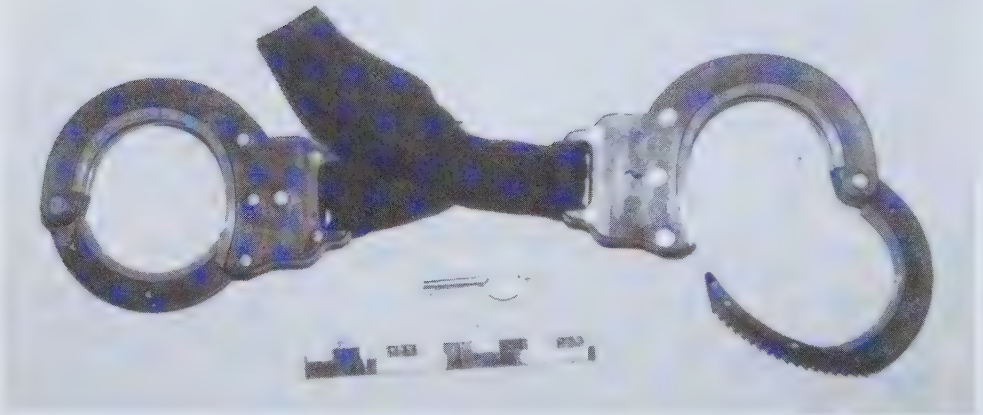


Figure 4. Webbing linkage handcuffs. The linkage consists of a 1 inch (2.5 cm) wide strong webbing strap 12 inches (30 cm) long, stitched so as to form a leading handle and holding the shackles 4 inches (10 cm) apart.

38. MISCELLANEOUS.

A considerable number of other handcuff types have been invented and patented, but not all of them have been commercially available. The author has found mention of the following items in various other publications and refers the reader to the books listed in the Bibliography for further information.

BALDWIN, CHENEY, GRAY, GUTEAU, HOUSTON, KRUGER, MEALER, ELIAS RICHARDS, SCHIELE, SEARLE, TRACKWELL and WIDMAYER.

One very well known handcuff is the imitation "Tower Detective" model handcuff (Fig.1). Versions of this handcuff were produced by unknown manufacturers for a brief period in the 1920s. The obvious difference to the original is in the slight variations of the shape of the lock case.

Two interesting chain handcuff types were manufactured. The BURDICK patterns (Fig.2) were the earlier ones, invented around the end of the nineteenth century. The WOOD handcuff (Fig.3) was patented in 1913 and many imitations of it were also made¹.

Another group of restraints which seems to be confined to the U.S.A. in modern times is the "OREGON BOOT" and its related items. These are very much of an antique design and are closely related to the medieval bazil.² Basically the restraint relies on its weight for its effectiveness. The LEININGER shackle was patented in 1876 and this restraint is very much the modern bazil (Fig.4).³ It consists of a hefty steel shackle in two halves which bolt together around one ankle and was available commercially in several weights. Some of these restraints have a stirrup like attachment (Fig. 5) which fits over the prisoner's boot, as part of the restraint. This holds the weight up off the ankle bone, presumably so that the wearer can work more effectively.

Several companies such as GALL'S and JAY-PEE, which supply equipment for police and security use, sell restraints marked with their names. These restraints are not made by them, but are made by other firms, usually in Spain or Taiwan. Gall's also market a clever device, a belly chain fitted with a MARTIN security link (Fig.6a & 6b). The belly chain should be fitted snugly around a prisoner's waist and the Martin link threaded through a suitably placed link in the chain. Chain linkage handcuffs are then threaded through the Martin link and the prisoner handcuffed, so locking the whole system (Fig.7).

1. See the replica in the Reproductions section of the Miscellany II chapter.

2. See the earlier Medieval Restraints chapter.

3. See also the "Clog" shackle shown in the Reproductions section of the Miscellany II chapter.

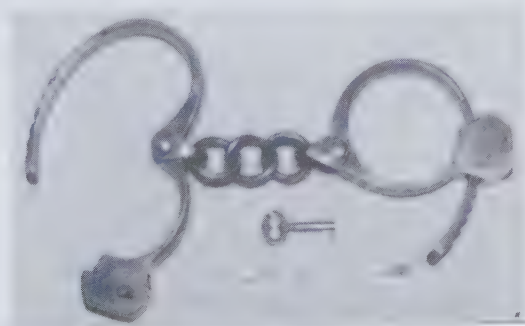


Figure 1. Imitation "Tower Detective" model handcuffs (Chris Gower Collection).

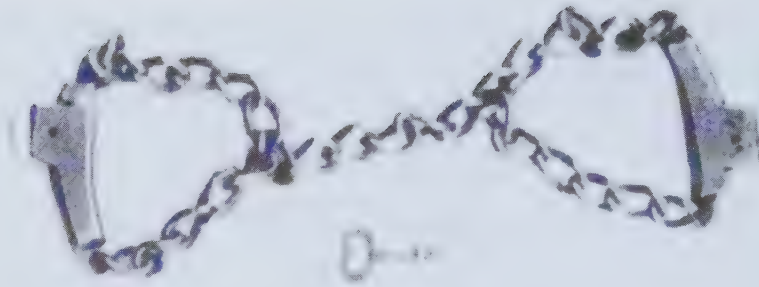


Figure 2. Burdick handcuffs (Yossie Silverman Collection).

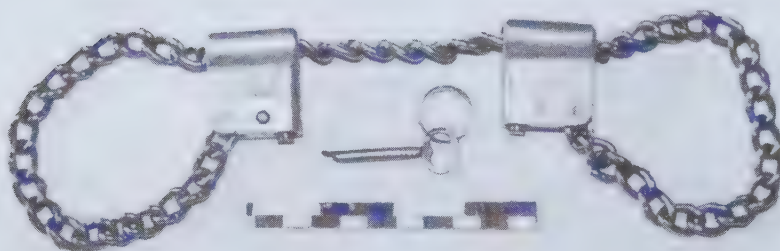


Figure 3. Wood handcuffs (Chris Gower Collection).

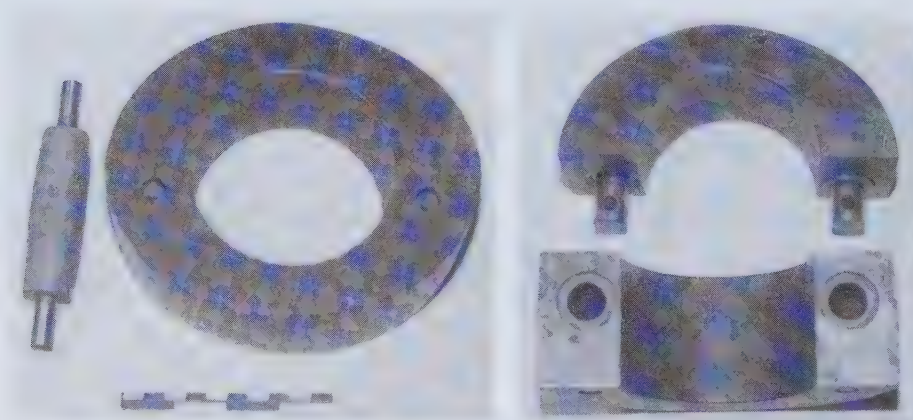


Figure 4. Leininger shackle (Chris Gower Collection).



Figure 5. Boot stirrup (Chris Gower Collection).

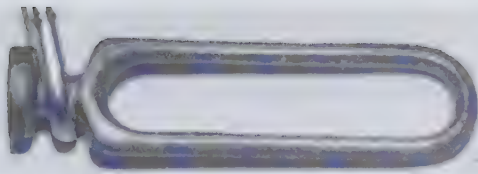


Figure 6a. Martin security link

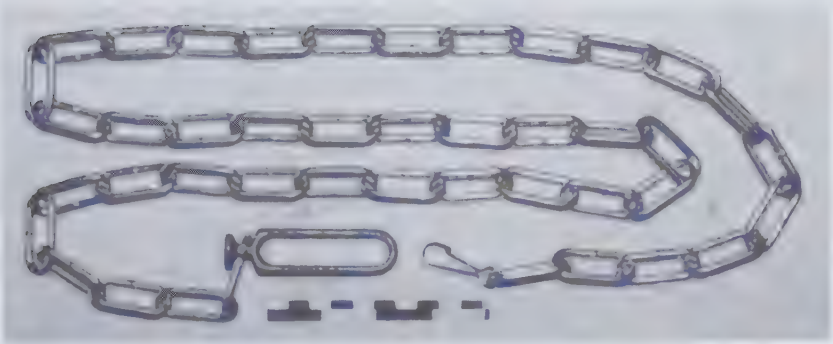


Figure 6b. Belly chain fitted with Martin link



Figure 7. Prisoner in Gall's belly chain, Martin security link and Hiatt model 2010 handcuffs.

D. ASIA.

(a) CHINA.

1. YANTAI MUPING GUANGHUAN.

Probably the best known Chinese handcuff is the so-called “H & R Super” copy. This is almost certainly the commonest type in use in China. A political cartoon (Fig.1) in a newspaper published there depicts a pair of this pattern handcuffs which were clearly the type most readers of that paper recognised. The author’s hypothesis is that when the United States of America was assisting the Chiang Kai Chek regime in its struggle with Mao Tse-Tung, part of the material aid given was the surplus stock of the H & R handcuffs it ceased using soon after World War I. When the Communists finally won the civil war, they took over the existing police forces and their equipment. When stocks of handcuffs got low, they simply made copies, though in the process they improved the lock design, but couldn’t compete with Harrington & Richardson’s quality! However, the Finnish police use a similar handcuff which was patented before the “H & R Super” model.¹ It may be therefore that the author’s hypothesis is wrong and this design has a much wider circulation than just the U.S.A.

The “H & R Super” copy is model SK180 (Fig.2) and it comes in two sizes, one is the same as the U.S.A. original and the other about 20% smaller.

1. See the Finland section above.



Figure 1. Cartoon (Guardian).



Figure 2. Model SK180 handcuffs, small size, with the pouch supplied with them.

2. UNKNOWN MAKER.

Leg-irons are also made which show a strange combination of primitive shackle and sophisticated lock. The lock is of the tumbler type and there is a cap to the lock case which is held in place by two screws (Fig.1). These screws are tightened with a screwdriver which is supplied with the key. The shackle is covered with rubber tubing, rather like the German Horst Stein models described earlier. The linkage chain is quite heavy.

A combination set¹ is available which has a pair of handcuffs joined to a pair of leg-irons by a chain, lighter than the one in the leg-iron linkage (Fig.2).

Typical Peerless copies are also produced, but the author has not been able to obtain any illustrations.

1. This may indicate that the leg-irons are made by the same firm as the handcuffs, but the different pattern of the joining chain may mean that it was added elsewhere.

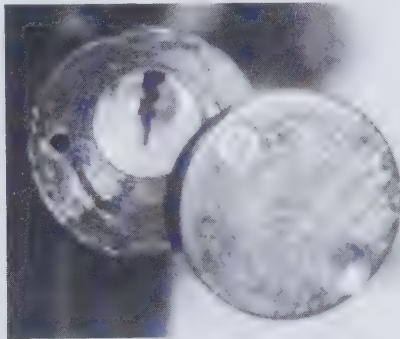


Figure 1. Leg-iron lock case cover.



Figure 2. Handcuffs and leg-irons combination set (Chris Gower Collection).

Numerous obviously blacksmith-made darby type restraints frequently turn up which are said to be of Indian manufacture. Some collectors are of the opinion that most of these were made in the late twentieth century and artificially “aged” with the intention of deceiving tourists. This may be true of some, but the author is of the opinion that others are genuine restraints that were used in India. It seems likely that, during the days of the British rule, some of the princes ruling the self-governing states had their own blacksmiths make copies of the darbies used by the British authorities rather than buy expensive imports (Fig.1). It is significant that a common type that turns up is of Hiatt’s “Scotland Yard” (Fig.2) and “flexible” (Fig.3) models, which means that these handcuffs must be of twentieth century manufacture. Leg-irons are also found (Figs.4,5 & 6)

Until the mid twentieth century at least, Hiatt must have supplied most of the British Empire/ Commonwealth. Another clue is that frequently the chains used are made from recycled screw threaded rod, not very likely for something to deceive tourists, but much more likely for a cash-strapped Indian ruler. It seems that there is no large scale manufacturer of these restraints in India, the items are all one-off pieces like the pre-modern restraints. It is only the modern locks and patterns that differentiate them from the medieval restraints described in the earlier chapter. However, there are still restraints of this type undoubtedly being manufactured in India at present. It is said that a firm called AB Enterprises in Delhi is one maker.

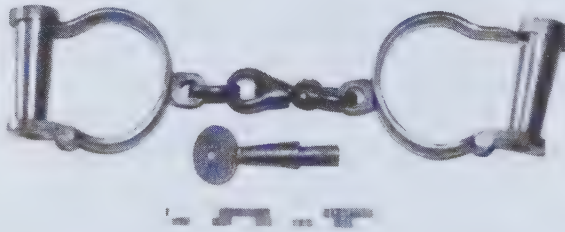


Figure 1. Darbies (Chris Gower Collection).



Figure 2. “Scotland Yard” copy handcuffs (Chris gower Collection).



Figure 3. “Flexible” pattern copy handcuffs.



Figure 4. Leg-irons.

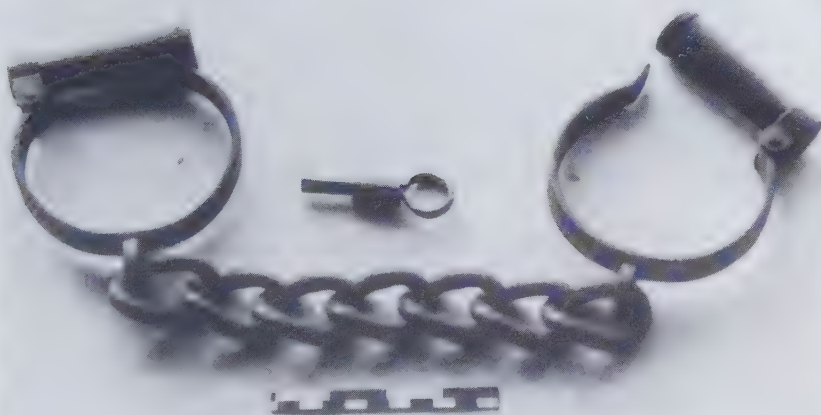


Figure 5. Leg-irons.

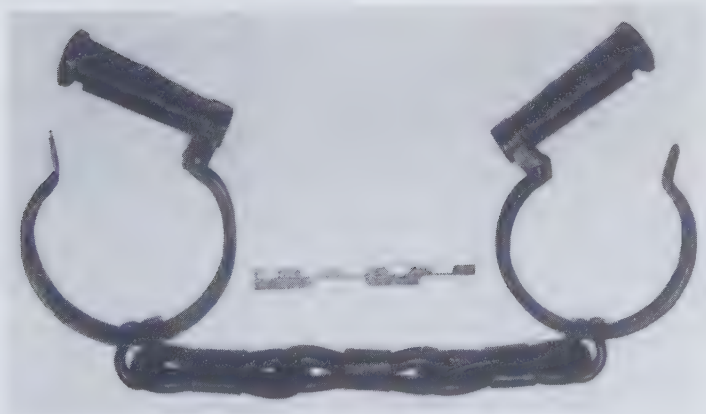


Figure 6. Leg-irons, the chain links are made of screw threaded bar (Peter McCahon Collection).

It is not surprising that Japan, as the first large scale industrial power in the Orient, should be a major producer of restraints. Until the opening up of the country to Western trade late in the nineteenth century, it seems likely that metal restraints were, at best, extremely rare. Rope tying was the usual method of restraint and the reader is referred to the Rope Ties section of the Miscellany I chapter for a description of the Japanese art of Hojojitsu. The two major influences were Great Britain in naval matters and Germany for military training. It is probable therefore that the earliest metal restraints used would be imported from one of those countries. Germany¹ is the most likely source for handcuffs as the army would probably have the closest connection with the police. A fair number of manufacturers have come into being since World War II, not surprisingly, these are mostly makers of Peerless copies.

1. See the footnote in the Clejuso entry in the Germany section earlier.

1. MASURI.

This company produced what may be the earliest Japanese Peerless type. The handcuff (Fig. 1) and leg-iron (Fig. 2) produced are made of nickel plated brass laminations and both are solid, well made items, not to be confused with the much commoner, inferior Takeda models. Double locking is by means of an external lever. An unusual feature is a cup-like arrangement which protects the keyway to make picking difficult.¹

1. See Dick Norman *Handcuff Secrets for Magicians* for a detailed description of this mechanism.



Figure 1. Standard handcuffs (Chris Gower Collection).



Figure 2. Standard leg-irons (Chris Gower Collection).

2. TAKEDA.

This company seems to have divided its operations between Japan and Taiwan as its products turn up marked as made in either country. The model M-52 handcuff (Fig.1)¹ is very common and is a copy of the Masuri model, but much less well made, being of pressed steel construction. It is ironic perhaps that these copies are themselves much copied as toys and novelties.²

1. See Model 660 in this firm's entry in the Taiwan section below.
2. See the Toys, Novelties & Jewellery section of the Miscellany II chapter later.

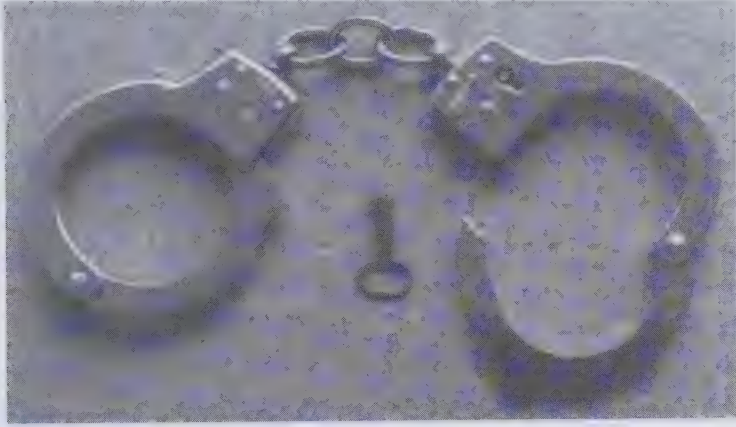


Figure 1. Model M-52 handcuffs.

3. MANCHU.

This firm produces a handcuff (Fig.1) resembling the first Peerless model, but with a flat key.



Figure 1. Standard handcuffs (Chris Gower Collection).

4. JGA.

Another firm producing a first model Peerless copy (Fig.1) which uses a flat key.



Figure 1. Standard handcuffs (Chris Gower Collection).

5. CHIEF OF POLICE.¹

This firm’s handcuff (Fig.1) looks much the same as the vast majority of modern Peerless types. the only difference is the key which has a locating prong on the tip.

1. The Spanish firm Larranaga y Elorza also sells handcuffs under this brand name .



Figure 1. Standard handcuffs (Chris Gower Collection).

6. EIG.

Another firm making a typical Peerless copy (Fig.1). A distinguishing feature is the key which has a locating prong on the tip as well as a double locking prong on the handle.

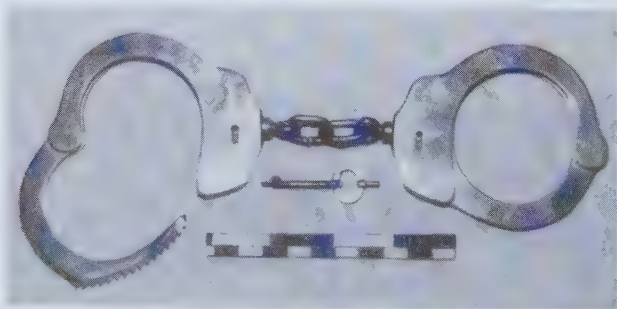


Figure 1. Standard handcuffs (Chris Gower Collection).

7. TSUGAWE.

The handcuff (Fig.1) made by this company is different to the usual Peerless copy in that it has a smaller, square lock case and a slightly curved keyway.



Figure 1. Standard handcuffs (Chris Gower Collection).

8. OSAKA-YAMAGUCHI.

This company's product is a typical Peerless handcuff (Fig.1).

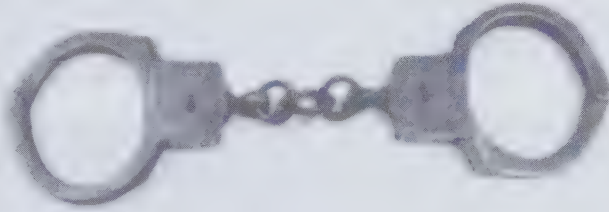


Figure 1. Standard handcuffs (Yossie Silverman Collection).

9. FUJIHARA GEROCO L.A.

The author has no information about these firms, but examples of their handcuffs are shown in the Stanley H. Smyth catalogue.

10. MARUISI.

The only example of this firm’s output that the author has found is illustrated with the picture (Fig.1) found on the Internet.



Figure 1. Standard handcuffs (E-Bay).

11. UNKNOWN MAKER.

A well made handcuff (Fig.1) sold in England by the firm Scalemead which specialises in replica firearms. Unusually it has a clear lacquer over the plating.

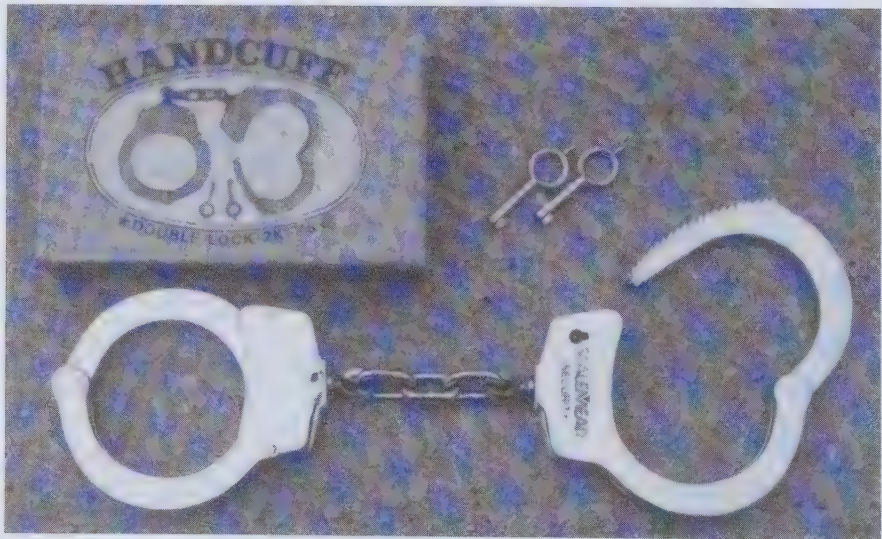


Figure 1. Standard handcuffs, with original box.

1. YUIL.

This company makes Peerless pattern handcuffs which differ from the norm in that the lock is slightly more complicated, so that the standard key will not open it. It also has the rare feature of a double set of serrations on the jaw to accommodate the anti-shim plate in the lock.¹ An ordinary chain link model (Fig.1) is produced, but it is the rigid model M-03 (Fig.2) that is unusual. This is rather longer than the "Quik-Kuf" or Hiatt "Speedcuff" and has a retractable ring fitted in the middle of the handle. This ring is for attaching the handcuff to a rope or gang chain, or to leg-irons. The company also produces a thumbcuff.²

1. See the entry for Poland above.

2. See the later chapter, Thumb and Finger Cuffs.



Figure 1. Standard handcuffs (note the key) (Chris Gower Collection).

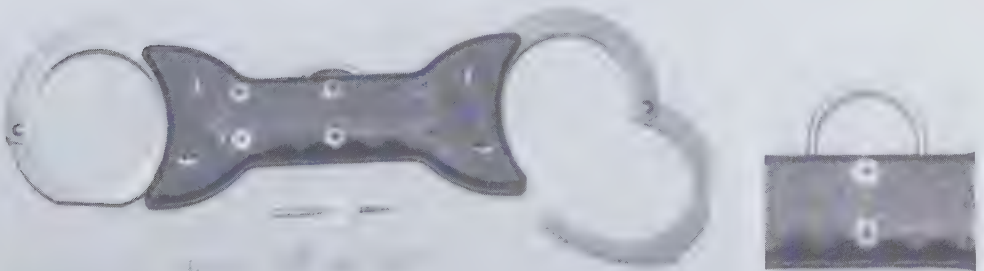


Figure 2. Model M-03 rigid handcuffs (inset shows ring pulled out fully).

1. UNKNOWN MAKER.

The first model handcuffs has two forms, the first of which is unusual because of the highly decorative finish (Fig.1), a swirling pattern design ground into the surface. This model is built up from very thin laminations producing a very slim handcuff indeed and the risk of injury to the wearer from the relatively sharp edges must be high. The second form is a plain version of that model (Fig.2). The second model is plain, but has a different keyhole position (Fig.3) which implies a different lock mechanism.

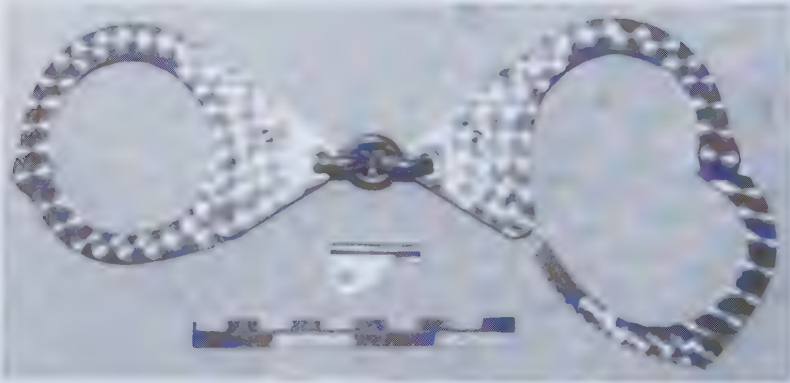


Figure 1. First model handcuffs (Chris Gower Collection).

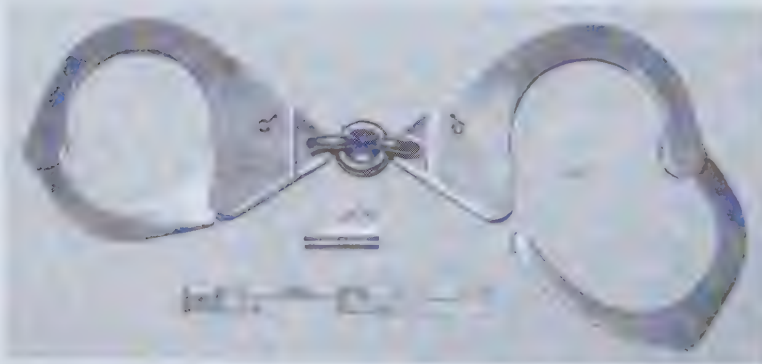


Figure 2 Plain version of first model handcuffs (Chris Gower Collection)

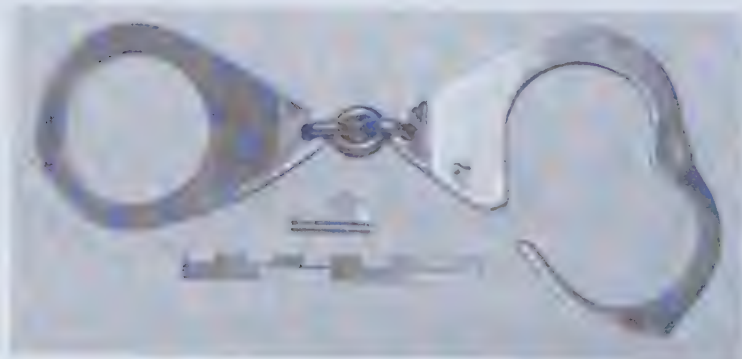


Figure 3. Second model handcuffs (Chris Gower Collection).

1. UNKNOWN MAKER.

The handcuffs figured (Fig.1) were bought in Thailand by another collector, but the author is not sure if they were made there. The only evidence is the inscription on the lock case which looks like Thai writing.

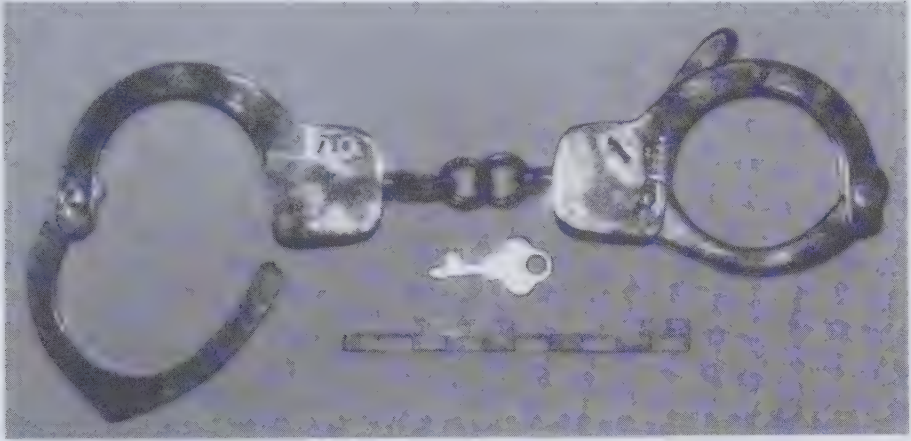


Figure 1. Standard handcuffs (Peter McCahon Collection).

(g) TAIWAN.

This country is one of the world's major producers of restraints. It seems likely that several companies exist, but the names are not known. The simplest way to proceed seems to be by brand or distributor name. Besides restraints for serious use, Taiwan makers produce several handcuff types which vary from very simple toys to items almost as strong as the real thing, but clearly intended for what may be loosely termed as leisure use (see the Toys, Novelties & Jewellery section in the Miscellany II chapter).

1. COLL-FU ENTERPRISE CO Ltd.

This company seems to be a general distributor of restraints made by several factories. The illustrations are taken from the firm's advertising material. Perhaps the most interesting items are the leg-irons in the first picture (Fig.1). The right hand pair look like a darby variant, but the pair on the left are of a primitive design and appear to have some kind of screw lock. The other items and those in the second advertisement are typical Peerless copies (Fig.2).

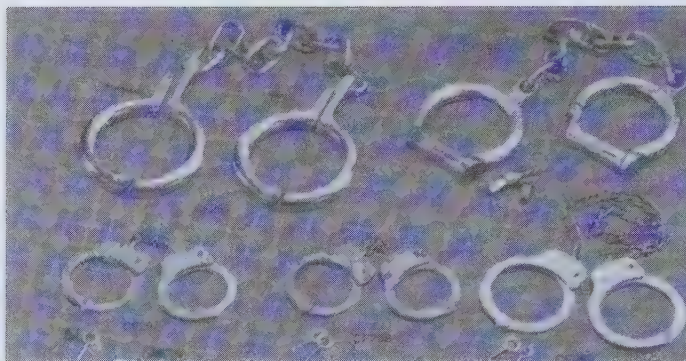


Figure 1. Coll-Fu Enterprise Co. advertisement pamphlet.

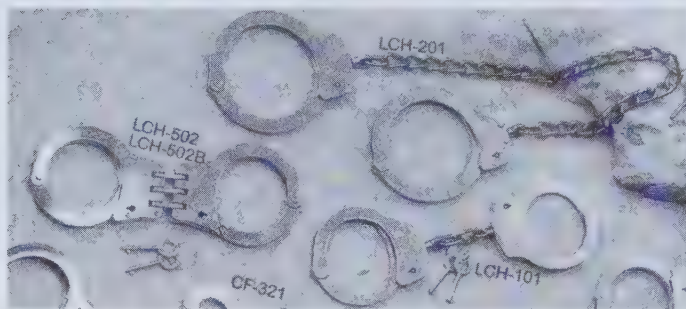


Figure 2. Coll-Fu Enterprise Co. advertisement pamphlet.

2. TAKEDA.

Takeda handcuffs turn up everywhere, usually in novelty or tourist souvenir shops. The model 660 illustrated (Fig.1)¹ is very cheaply made and while it is not good enough for use by regular law enforcement agencies, it is sufficiently strong to be effective as a restraint. It is frequently used in situations where, if the key is not available, strong bolt cutters are used for removal.² Double locking is by an external lever, which does not need the key to undo.

1. The firm also operates in Japan and this model is almost identical to the model M-52 made there (see above).

2. See the Toys, Novelties & Jewellery section of the Miscellany II chapter.



Figure 1. Model 660 handcuffs.

3. FURY.¹

This firm produces a typical Peerless copy (Fig.1), marketed by the United States of America firm, Joy Enterprises, New Jersey.

1. The Spanish firm Larranaga y Elorza also makes handcuffs under this brand name .



Figure 1. Standard handcuffs, with original box (main colour green).

4. H.W.C.

These typical Peerless copies (Fig.1), slightly better than most made in Taiwan, are made for the Hamburger Woolen Co. Inc., New York, U.S.A¹. The firm also makes leg-irons.

1. Niton Equipment Ltd. is this firm's British distributor.

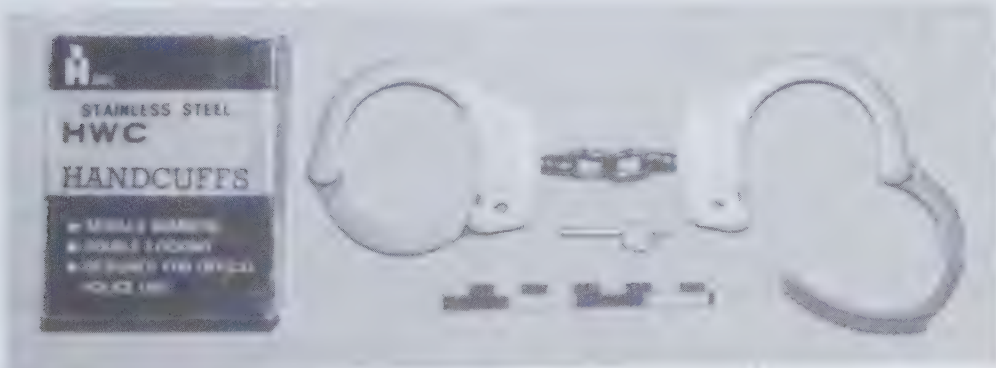


Figure 1. Model SSC-1 stainless steel handcuffs with original box (main colour blue).

5. NAPED.

A pair of leg-irons (Fig.1) is all that the author has been able to discover of this firm's products.

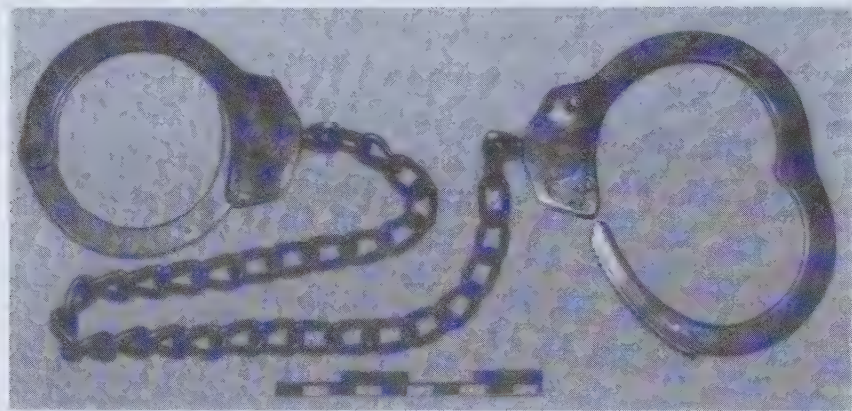


Figure 1. Standard leg-irons (Peter McCahon Collection).

6. UNKNOWN MAKER.

A handcuff (Fig.1) and legcuff (sic) (Fig.2) frequently turn up thus labelled. They are quite well made and the chain link handcuff, which has no markings of any kind, seems to be the one of choice for criminals to use, judging by the number of times it has been shown on British television programmes like *Crimewatch*! A well made hinged handcuff has a non-standard key (Fig.3).



Figure 1. "Handcuffs" with original box.

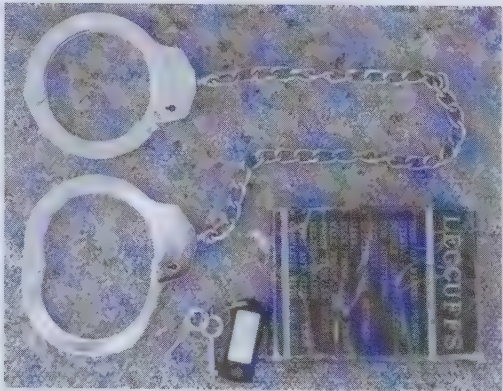


Figure 2. "Legcuffs" with original box.

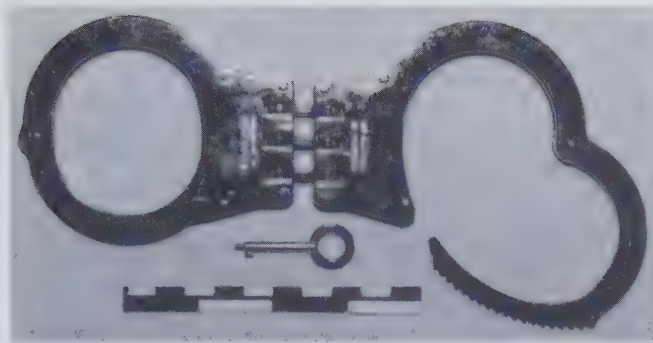


Figure 3. Hinged handcuffs, marked PAT.No.82221 & ZL932074138 (Chris Gower Collection).

(h) TURKEY.

1. UNKNOWN MAKER.

A handcuff (Fig.1), identical to the second form of Clejuso's first Peerless type, seems to have been made in Turkey. Presumably, this is done under licence from Clejuso.

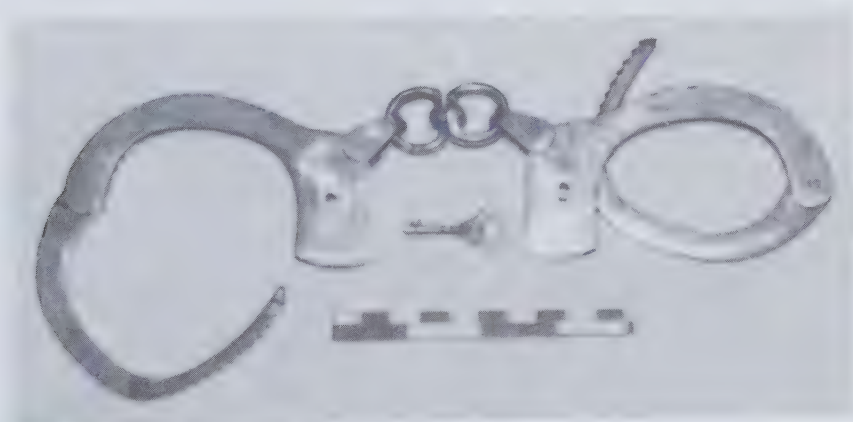


Figure 1. Standard handcuffs (Chris Gower Collection).

E. AFRICA & AUSTRALASIA.

(a) REPUBLIC OF SOUTH AFRICA.

It seems likely that restraints were not manufactured in the Republic of South Africa until the days of the Apartheid regime, when international sanctions made the import of such things virtually impossible. The name of the companies making the first items produced is not known, but it seem likely that there were at least two of them, differentiated by the quality of the items made. These first items were crude copies of the Peerless type, some very crude indeed.

1. UNKNOWN MAKERS.

Two basic models turn up, chain linkage and hinged. One chain linkage model (Fig.1) has no swivels, the keyholes are on the same side, so they open oppositely. A better made model has a single swivel (Fig.2) The chain link version of the hinged model has a much cruder swivel (Fig.3). The hinged model has a very crudely made hinge (Fig.4). The keys are non-standard and there is no double locking ability. Leg-irons of a very primitive, though quite well made type, were produced (Fig.5). These look like the medieval riveted shackles, but they are adjustable, having four holes in one half of each shackle and one in the other, for locking with a padlock. The author owns a pair of very well made Scotland Yard pattern handcuffs marked SAP (South Africa Police) (Fig.6), which have no maker's name, but are said to have been made in South Africa. However, these handcuffs look identical to those produced by the British firm Reuben Craddock & Son, especially the key, indeed a known RCS key will open them. It is possible therefore, that these handcuffs were actually made in Britain.

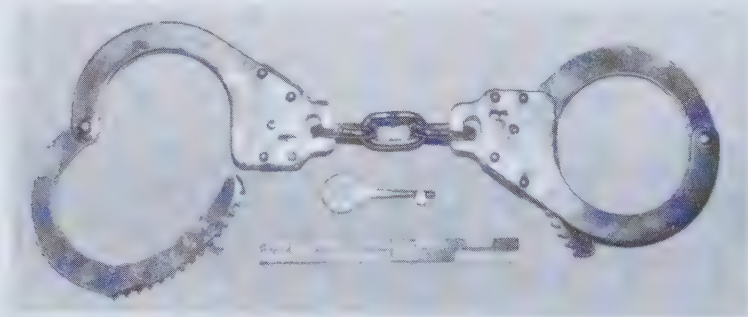


Figure 1. Standard handcuffs, no swivel model.



Figure 2. Standard handcuffs (Chris Gower Collection).



Figure 3. Standard handcuffs (Mike Riccard Collection).



Figure 4. Hinged handcuffs.



Figure 5. Leg-irons.

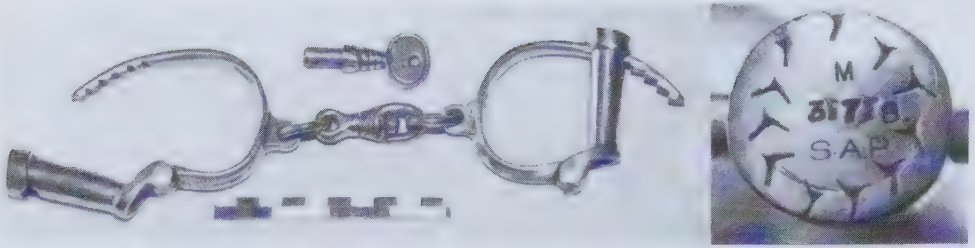


Figure 6. Unknown maker's "Scotland Yard" pattern handcuffs (Note lock case markings).

1. REPUBLIC ARMS (Pty) Ltd.

This company seems to have commenced manufacture soon after the collapse of the Apartheid regime and the introduction of democracy. It produces a hinged model handcuff of very good quality, virtually indistinguishable from mainstream Peerless models (Fig.1). Only one shackle type is made, so that in this model to have the keyholes on the same side, the shackles open oppositely, unlike most European or American hinged Peerless type handcuffs.

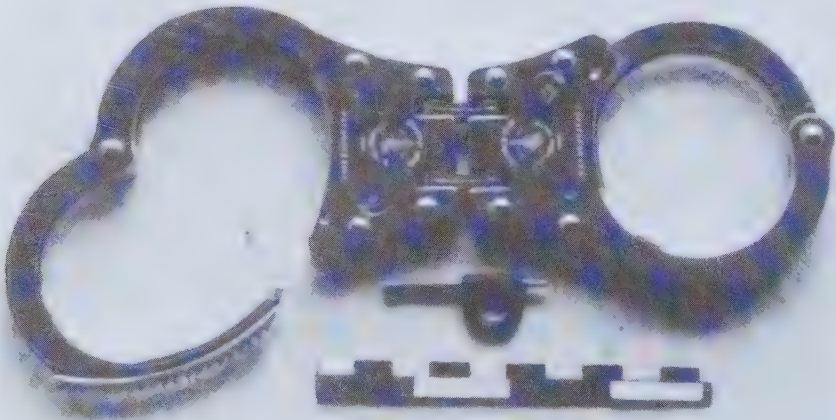


Figure 1. Hinged handcuffs.

1. REUTELER.

This company is based in Harare, the author has tried to contact it, but without success, which is not surprising when one considers the present disturbed state of the country. The company has made a Peerless type handcuff of rather crude quality. Only one shackle is made, so keyholes are opposed if the shackles are put on a prisoner the same way up. The linkage is by two chain links and two very crude swivels. The key is non-standard and there is no double locking ability.



Figure 1. Standard handcuffs (Peter McCahon Collection).

1. AUSTRALIAN DEFENCE INDUSTRIES.

This company is owned by the Australian Federal government. The first handcuff it produced is a straightforward type similar to the early Peerless models (Fig.1). The next model, the "Saf-Lok" handcuff (Figs.2 & 3) is one of the neatest high security models on the market. There are four marks, all much alike and only varying in the lock mechanism. The lock is of the tumbler type, with the keyway in the top of the lock case. The key operates through the double locking button and this has to be turned to set the lock. The handcuff can only be unlocked if it has been double locked.

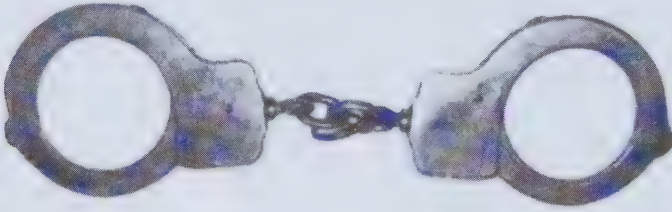


Figure 1. First pattern handcuff (Yossie Silverman Collection).

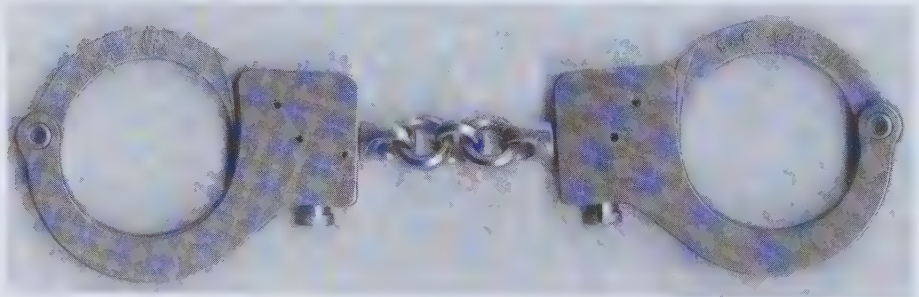


Figure 1. Mark I model handcuffs.



Figure 2. Mark IV model handcuffs.

2. SAFECITY.

This company announced in 1999 that it was in the process of producing a new handcuff, which it expected to have on sale in mid 2000. In February 2001 it announced that production difficulties are producing delays and their new handcuff is not likely to be ready for sale until later in the year. However, the handcuffs have not yet appeared in May 2002. It is thought that the new design is of a hinged model.

5. THUMB AND FINGER CUFFS.

Modern thumb and finger cuffs¹ have their origins in the thumbscrews and finger stocks of earlier times. Medieval thumbscrews were almost always used as instruments of torture rather than as restraints. However some were of quite simple construction and could have been used just for restraint (Fig.1). A more sophisticated design is like a miniature “bagno” handcuff, sometimes described as of Austrian origin (Fig.2). This is clearly derived from the medieval thumbscrew and is locked with a padlock.

A famous thumbcuff manufactured in the United States of America is the Tower Lyon model of 1909 (Fig.3) which has a most ingenious shackle arrangement. This is almost identical to the model patented by Frank McDonald in 1888, which is regarded as the first modern thumbcuff. Similar is the Gale fingercuff, patented by Cushing in 1936 (Fig.4) which looks rather like a single shackle version of the Towers thumbcuff with an added handle. It has a push button opening mechanism which does not require a key. This and the handle makes this restraint really a type of grip. Another ingenious fingercuff is that patented by Hedrick in 1912 (Fig.5) but this does not seem to have been commercially produced.²

Modern swinging bow thumbcuffs are all very much alike, the prototype being Gill’s “LION TAMER” of 1930 (Fig.6). Later came the “ACE” (Fig.7), the “THUMCUFF” (sic) (Fig.8), the “MITYMITE” (Fig.9) and the George Cake (Fig.10) models, all from the U.S.A. The Korean model by YUIL of the 1990’s differs in that it has a separate keyhole for each shackle (Fig.11). The late twentieth century Taiwanese model illustrated is typical of the many recent models available (Fig.12).

Two thumbcuffs from the Philippines are like miniature chain link handcuffs (Fig.13) and much stronger than those key ring items shown in the Toys, Novelties and Jewellery section in the Miscellany II chapter. These are intended as real restraints. A little less sturdy, but similar, thumbcuff is marked SUPER-K and is said to be from Singapore (Fig.14).

1. See Burling Hull *The Handcuff King Act*, which contains an article on thumbcuffs by Prynce Wheeler.

2. Ian McColl has made up a set of these fingercuffs from the patent drawings and tried them out – he said that they do not work at all efficiently! See his photograph of these cuffs in the Reproductions section of the Miscellany II chapter.



Figure 1. Simple thumbscrew (York Castle).

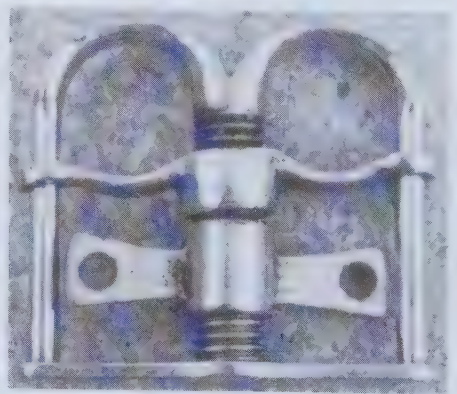


Figure 2. Austrian thumbscrew.



Figure 3. Tower Lyon thumbcuff
(Chris Gower Collection).

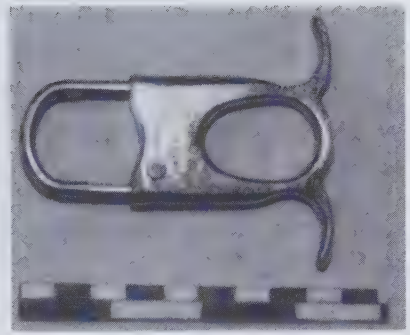


Figure 4. Gale fingercuff (Chris Gower Collection).

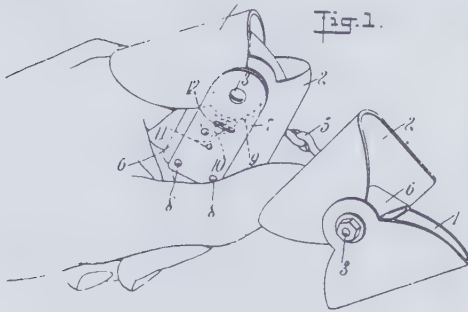


Figure 5. Hedrick fingercuff, patent application drawing.

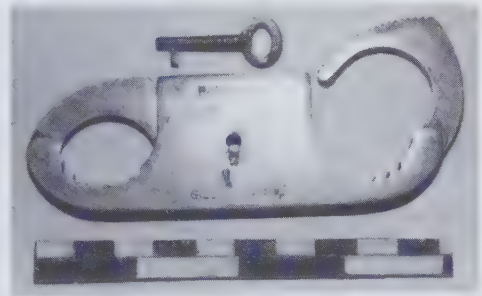


Figure 6. Gill "Lion Tamer" thumbcuff (Chris Gower Collection).

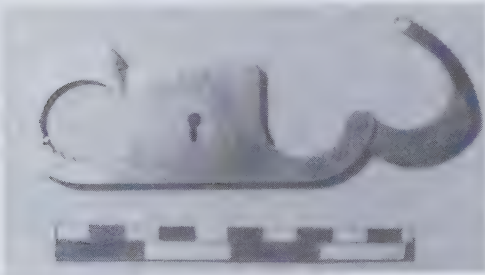


Figure 7. "Ace" thumbcuff, model 1 (model 2 has the notches continued around the inside of the jaw).

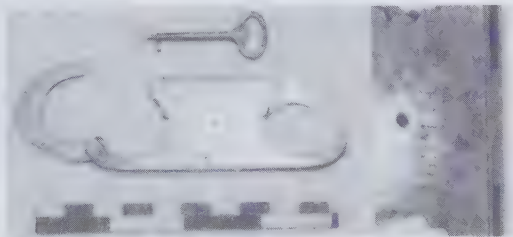


Figure 8. "Thum" thumbcuff (The Royal Armouries, Leeds).

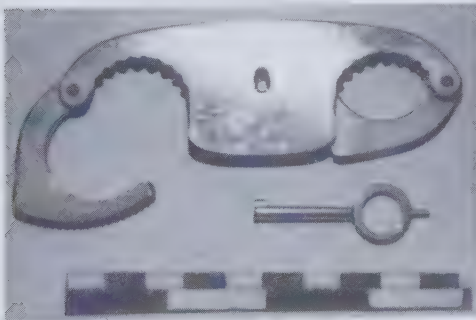


Figure 9. "Mitymite" thumb cuff (Chris Gower Collection).

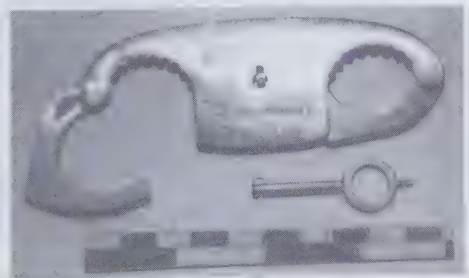


Figure 10. Cake thumbcuff (marked GEORGE F CAKE
BERKELEY CALIF. U.S.A. PATENT PENDING)
(Chris Gower Collection).



Figure 11. YUIL thumbcuff.



Figure 12. Taiwanese thumbcuff (the second keyhole is for undoing the double lock).



Figure 13. Philippine thumbcuffs, like the handcuffs from that country, in plain and decorated finishes (Chris Gower Collection).

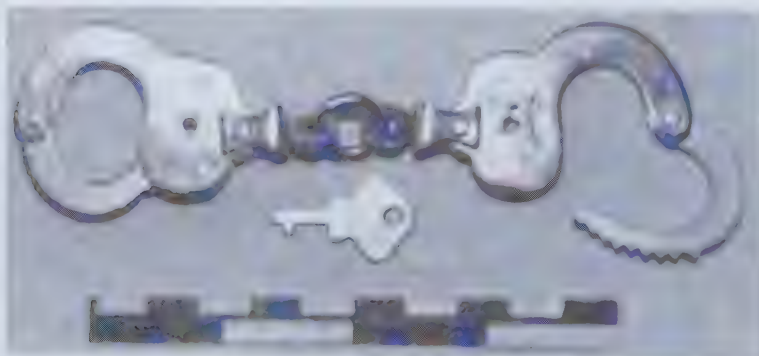


Figure 14. "Super K" thumbcuffs (Chris Gower Collection).

6. GRIPS AND RELATED ITEMS

It has been noted in an earlier chapter that there are restraint devices erroneously called handcuffs by some which are not lockable. These are grips which are usually called "come-alongs" in the United States of America. These require the captor to hold on to them as they can easily be opened by the prisoner if left unattended. Probably the earliest type is a leather thong with a wooden toggle at each end (Fig.1). This has been described as being in use in Italy in the 1600's and is very effective. A simpler version uses a leather loop and one toggle (Fig.2). In modern times metal chain is usually used instead of leather, a simple version was made by R.S.B. & Co (Baldwin?) in the U.S.A. in the early twentieth century (Fig.3) with plain handles like the earlier wooden toggles. The French set of about 1920 has loop handles (Fig.4). The German firm "Clejuso" still makes such a grip (Fig.5) which has the handles made to fit together. A common French or Belgian version, used from the mid nineteenth century until well into the twentieth century, is made of twisted wire link chain with wooden toggle handles (Fig.6). Grips of this type are sometimes called "wrist crackers" and it is easy to see why!

Sometime in the middle of the nineteenth century an attempt was made to produce a scissors type handcuff. This was not successful but the idea was extended into the production of a scissors grip (Fig.7). Grips of this type are often called "snips" or "snaps" and were made by several manufacturers in Britain and all look very much like the nineteenth century Hiatt model figured. Other manufacturers are Pape (Fig.8) and Thewlis & Griffith (Fig.9). Other handcuff manufacturers such as Dowler also made grips of this type. Hiatt ceased making them about 1980 (Fig.10) but Clejuso still make one (Fig.11). W. Turner, probably in the late nineteenth or early twentieth century, made similar grips and also one with a sturdier closing clip, which is so strong that although it can be undone by the hand of a strong person, it needs a screw key to undo easily (Fig.12). In this respect it is more like the hybrids mentioned later.

In the U.S.A. there have been many devices of this type invented,¹ very few of which were commercially produced. One of the most popular models was that invented by W. Gray Phillips in 1869 which he called a "nipper" (Fig.13) and several versions of this type of grip were made. A similar one was made in Britain by an unknown firm (Fig.14). Also available were rather simpler nippers, merely a hook with a closing bar held shut with the handle (Fig.15). More complicated are the Madison (Fig.16) and Hercules nippers (Fig.17) sold by P.C. Holland of Chicago. Even more complicated is the Thomas nipper (Fig.18) which, like the Maltby nipper, has a press button which shuts the grip as soon as it is pressed against a wrist. Perhaps the most unusual grip from the U.S.A. is the pistol handled grip (Fig.19). This has an adjustable shackle opened by a push button mechanism resembling that on the French training handcuffs described in the Training Aids section of the Miscellany II chapter.

The Germans appear to like a type of grip called a "claw" and the two types that turn up most commonly were produced in the first half of the twentieth century. The first, patented by Heid and Roth in 1910, is a spring loaded grip which needs the spring to be compressed in order to open it and then it sizes itself to fit the prisoner's wrist (Fig.20). The second uses a lever system to secure the wrist (Fig.21). A modern Taiwanese claw grip² uses a mechanism that requires the handle to be turned in order to screw the claws shut to fit the wrist. When the fit is snug, a knurled locking nut can be screwed down with the fingers to secure it (Fig.22).

The locking nut mentioned in connection with the Taiwan claw leads to consideration of a type of restraint that is a hybrid, a grip that can be locked. In the mid nineteenth century a grip was made which operated like the "snips" mentioned earlier, but which has a key operated screw which can lock the catch (Figs.23 & 24). In fact, if the handle is put over the prisoner's other wrist, the grip can be converted to a pair of handcuffs. The idea of convertible grips was taken

up by several inventors in the early years of the twentieth century but most were never made commercially. Probably the best known type is that invented by G.W. Pratt, first model patented in 1916 (Fig.25) and the second in 1932 (Fig.26).

Another hybrid restraint is that which is sometimes called a “cabriolet”. This usually consists of a single standard handcuff shackle attached to some form of handle. It often looks like a chain “wrist cracker”, sometimes of the twisted wire link pattern, with a shackle replacing one handle. Most seem to be of French or Belgian origin and the first one figured is a mid twentieth century Rivolier model, which can even be doubled locked by using a padlock (Fig.27). The second probably earlier model is by La Massenotte (Fig.28). Probably the most extreme form of this type of restraint is the model 6010 single shackle and lead chain now made by Hiatt-Thompson (Fig.29) though this is probably more commonly used as a lead chain with the shackle around the linkage of a pair of handcuffs.

Sometimes grips, usually of the “wrist cracker” type, are used as auxiliary restraints, as a kind of lead chain. The chain is wrapped around the link chain of ordinary handcuffs or on one wrist of the prisoner if hinged handcuffs are used (Fig.30). Another device carries this idea a stage further and consists of a hook with a handle. The hook can be put around the handcuff linkage and the prisoner is brought under the close control of the guard (Fig.31).

1. See John G. Peters, *Tactical Handcuffing* for many illustrations taken from inventors' patent applications and also Don Stewart, *Collectors Guide Handcuffs & Restraints*
2. This grip is a copy of the “Claw” patented by Yngve Smith-Stange in 1934 and made by Argus Mfg.Co. Chicago, U.S.A.

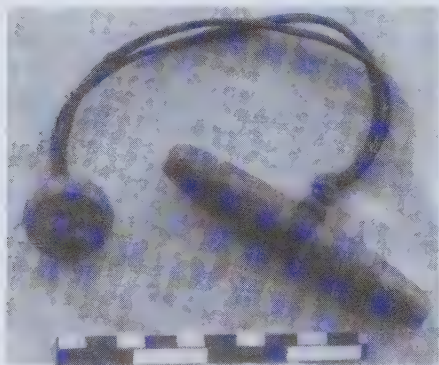


Figure 1. Replica leather thong grip.

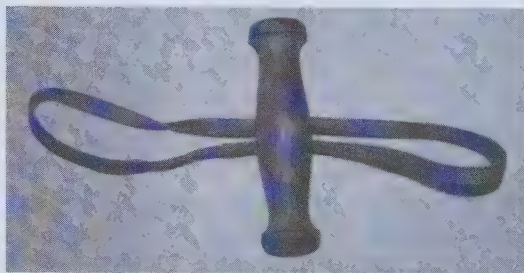


Figure 2. Leather loop grip (Scottish Borders Museum Selkirk).

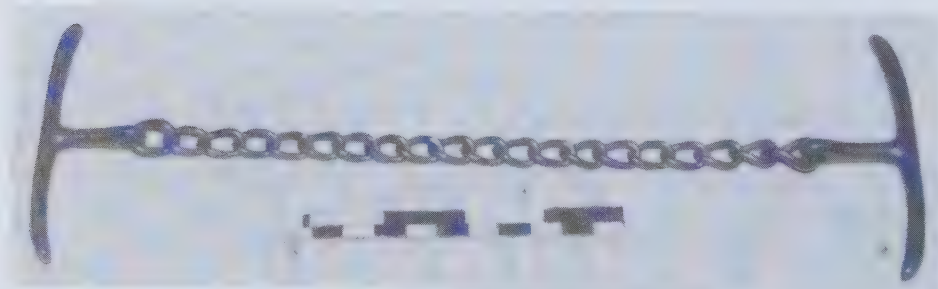


Figure 3. Baldwin chain grip (Chris Gower Collection).

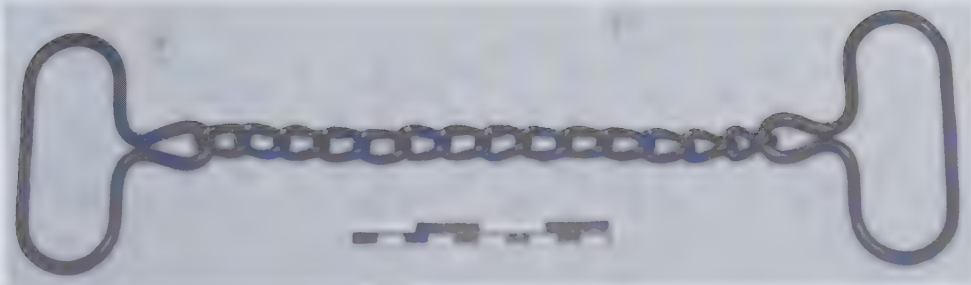


Figure 4. French chain link grip (Chris Gower Collection)



Figure 5. Clejuso chain link grip



Figure 6. Belgian wire link chain grip (Chris Gower Collection).

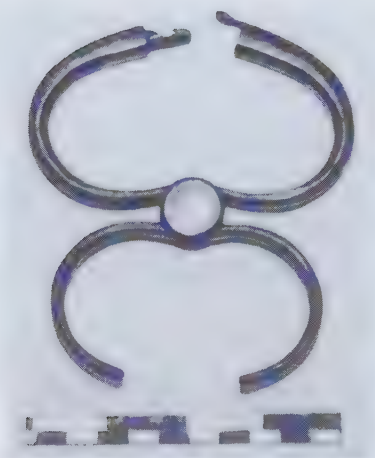


Figure 7. Hiatt scissor grip (19th century).

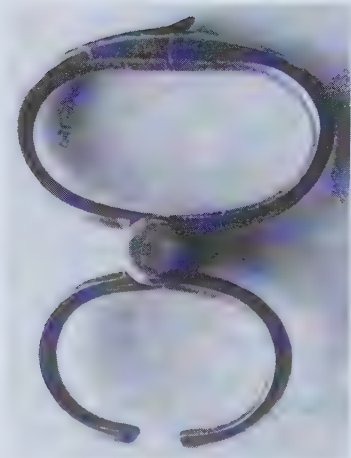


Figure 8. Pape scissor grip.

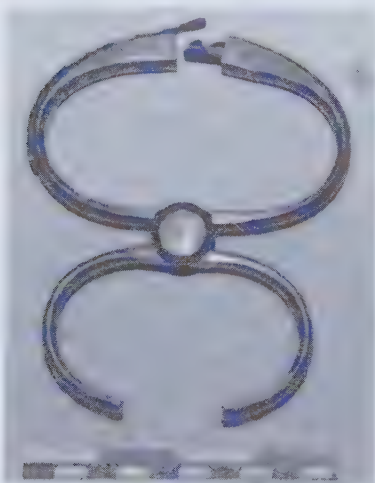


Figure 9. Thewliss scissor grip
(Chris Gower Collection).



Figure 10. Hiatt last model scissor grip.



Figure 11. Clejuso scissor grip.



Figure 12. Turner scissor grip (note the keyhole for the missing screw-in key) (York Castle).



Figure 13. Phillips "nipper".



Figure 14. Unknown maker's "nipper" (note the springs holding it open ready for use) (West Midlands Police Museum, Birmingham).

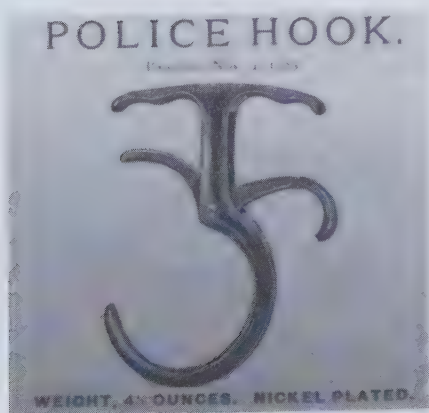


Figure 15. Hook grip (Lovell Arms Co.).

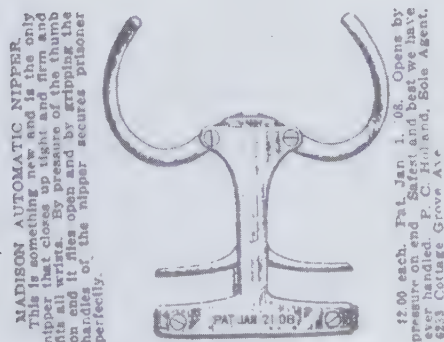
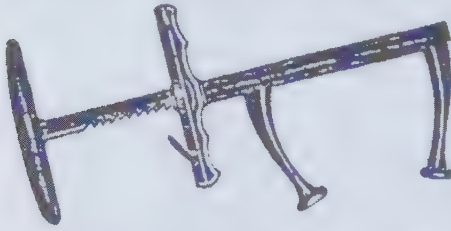


Figure 16. Catalogue drawing Madison grip

HERCULES NIPPER.
Opens automatically. When both bars
of handle are grasped firmly and brought



together the nipper closes on and holds
securely the wrist of the prisoner. By
mail, prepaid, \$2.50. P. C. Holland, Sole
Agt., 6333 Cottage Grove ave., Chicago.

Figure 17. Catalogue drawing Hercules grip.



Figure 18. Thomas grip (Chris Gower Collection).

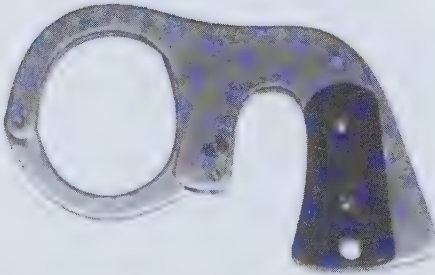


Figure 19. Pistol grip (Yossie Silverman Collection).

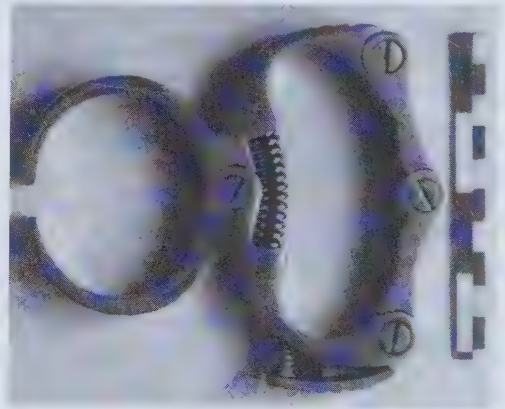


Figure 20. Heid and Roth grip.

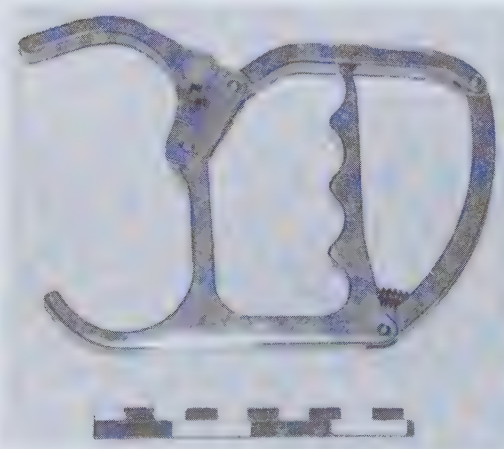


Figure 21. German lever grip (Chris Gower Collection).



Figure 22. Taiwanese "Claw" grip.

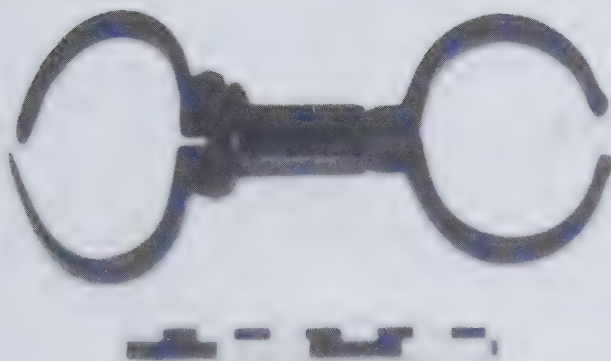


Figure 23. Lockable grip. A screw key (missing) can lock the left hand side and goes in at a right angle to the axis of the grip (York Castle).



Figure 24. Lockable grip. A screw key (missing) can lock the right hand side and goes in parallel to the axis of the grip (York Castle).



Figure 25. Pratt grip, first pattern (Chris Gower Collection).



Figure 26 Pratt grip, second pattern (Chris Gower Collection)



Figure 26. Rivolier "cabriolet" (note the holes for double locking with a padlock)
(Chris Gower Collection).

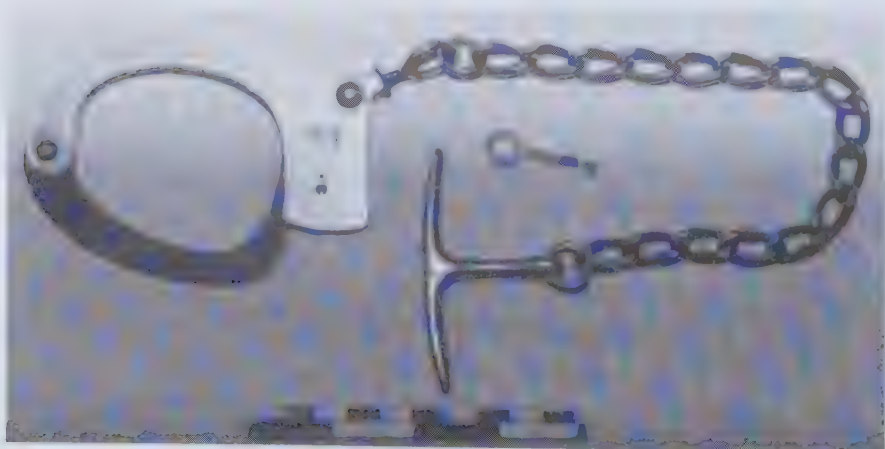


Figure 27. La Massenotte "cabriolet" (Chris Gower Collection).



Figure 28. Hiatt model 6010 single shackle and leading chain.



Figure 29. Chain grip being used as a leading chain (Guardian).

Control Bar

Designed to assure that you are in control, not the person in custody. Hook over handcuffs to guide and steer the prisoner without putting yourself at risk for hand or finger related injuries.

Control Bar - \$37.95

Code EGCB



Figure 30. Leading hook (PX Direct catalogue).

7. PLASTIC AND WEBBING RESTRAINTS.

In the second half of the twentieth century plastics have been much used in the manufacture of restraints. The most obvious example is in the use of nylon or polypropylene-like material to make "plasticuffs". These are disposable wrist ties, cheap to produce, light to carry and easy to use, which can be cut off and thrown away afterwards. In the United States of America the commonest models seen are those produced by Monadnock and Safariland in black or white material. Monadnock make two basic types, single (Fig.1) and double (Fig.2). This firm supplies the single ones in two lengths, 17 and 22 inches (43 & 56cms) and also make a third type which does not have locking serration. This is used for training purposes and is coloured red to avoid mistaken use on real prisoners.

Tuff-Cuff produce a double plasticuff (Fig.3) which differs from the Monadnock pattern in that, when applied, the serration is on the outside of the hand rather than against the skin. This makes it easy to shim these open with a suitable piece of firm material (the author uses a thin brass strip) so that they can be re-used. A rather different design is that of Safe-T-Cuff (Fig.4) which also can be shimmed easily as the serration is on the outside.

Safariland provide single ones, but also a version that can be opened with a standard handcuff key, so that they are re-usable (no more than five times the firm recommends). These are produced in grey or black forms (Fig.5). A single pattern plasticuff is also made by the British firm TCA, which is somewhat flimsier than the Monadnock types (Fig.6). In Germany, Clejuso makes a narrower model which uses a small metal spring to engage the serration (Fig.7).

"Plasticuffs" are really a variation of the ties produced for various purposes, e.g. for use by gardeners or electricians (Fig.8).¹ Special cutters are made for removing plasticuffs (Fig.9).

A company in the U.S.A. makes a restraint called the Tuff-Tie Handcuff, which consists of a shoelace like cord and a small plastic locking device (Fig.10). These are designed as disposable handcuffs, small enough for keeping several in a pocket. These are available in small (for women or juveniles), standard and leg sizes (Fig.11). A special hook shaped cutter is supplied for removal (Fig.12).

Several firms make a series of restraints which use webbing material, usually made of plastic fabric. A simple leg strap made by several firms in Britain and the U.S.A. is designed for use with prisoners being transported in a car. The strap goes round the ankles, usually held by a quick release buckle and with a long free end, fitted with a blank buckle, which can be trapped in the vehicle door when it is closed. This prevents the prisoner from attacking the guard or doing damage in the car by kicking. The strap illustrated was produced by the English firm Civil Defence Supply (Fig.13).

The firm RIPP™ in the U.S.A. produces a range of restraints using webbing, with hook and loop fastening ("Velcro"). The simplest is their "Quick Cuff" (Fig.14), which needs to be put on behind the prisoner's back as it can be easily opened with the teeth. Extra security is added if it is covered with the firm's "Hand Bag" (Fig.15) which can also be put on over other handcuff types. The firm also produces various security belts (Fig.16) and arm or leg restraints. They also make an emergency transport belt (Fig.17) that uses two Monadnock short single cuffs. After the cuffs have been cut off, the belt can be re-used.

Simple webbing or woven plastic rope-like hobbles are made which can be used to secure elbows, knees or ankles (Figs.18 & 19). They have gained a bad reputation because of their

use to “hog-tie” violent struggling handcuffed prisoners, some of whom have died in custody in such restraints. Several companies produce “Wraps”, simple gadgets made of tear-proof material, that are wrapped around a struggling prisoner. These vary in width from about 6 inches (15 cm) to 39 inches (1m) and are secured with “Velcro” strips (Fig.20).

Another English firm, Niton Police Products, brought out an ingenious device in 2000, designed originally for use on aircraft to immobilise violent passengers, but some British police forces use it when transporting prisoners by car. This is called “VIPERS” (**V**iolent **P**erson **E**mergency **R**estraint **S**ystem) a set of webbing straps to secure arms and legs (Fig.21). On its own it can be used to restrain a prisoner, but a pair of handcuffs needs to be added to prevent the prisoner undoing the straps if the restraint is required for more than a short time (Fig.22). The set is supplied with a carrying case.

In 2001 the English firm TME(UK) introduced what may well be the most effective device for tackling violent persons, the “Hugger”. This has been nicknamed the “English Lasso” in the U.S.A. and it is easy to see why. The basic restraint is a webbing strap held in a plastic T shaped handle, which can be placed over a struggling person. It can then be drawn tight so as to trap the arms (Fig.23). A smaller version is used to trap the legs (Fig.24). Wrist restraints are also made (Fig.25) and the whole kit comes in a carrying case. The manufacturer told the author that the kit was carefully designed to take into account the United Nations directives about the human rights of prisoners.

- 1. United Nation troops used ties of this type on prisoners in East Timor during the 1999 troubles there.



Figure 1. Monadnock single plasticuff, short size, 43cm (17").



Figure 2. Monadnock double plasticuff.



Figure 3. Tuffcuff double plasticuff.



Figure 4. Safe-T-Cuff plasticuffs (instruction leaflet).

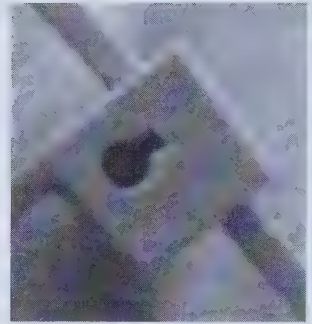
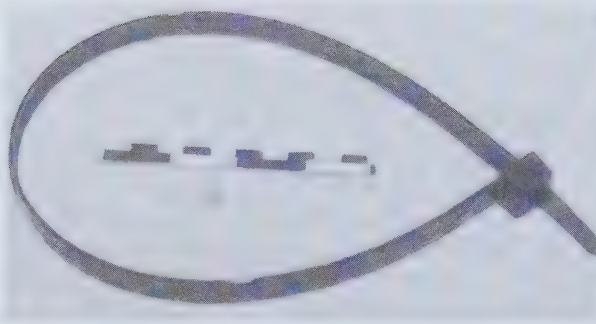


Figure 5. Safariland re-usable plasticuff (note keyhole for standard handcuff key).



Figure 6. TCA plasticuff.



Figure 7. Clejuso plasticuff.

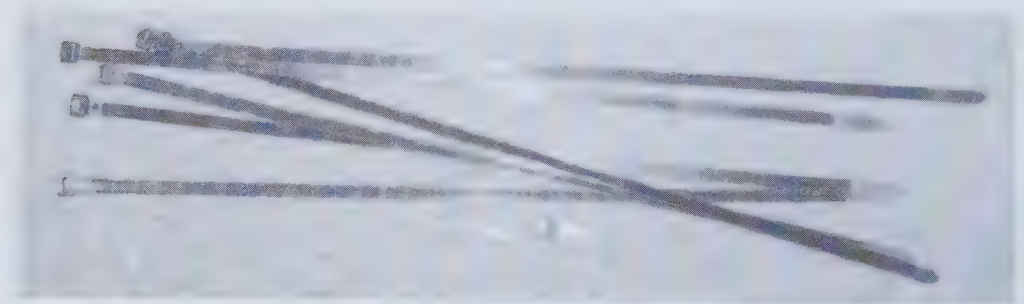


Figure 8. Electricians' cable ties.



Figure 9. Plasticuff cutter.



Figure 10. Tuff-Tie locking block.



Figure 11. Set of Tuff-Tie restraints. Leg size at the top, then small size handcuff in the middle and standard handcuff at the bottom of the picture.

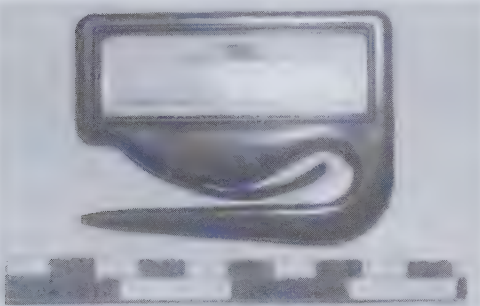


Figure 12. Tuff-Tie cutter.

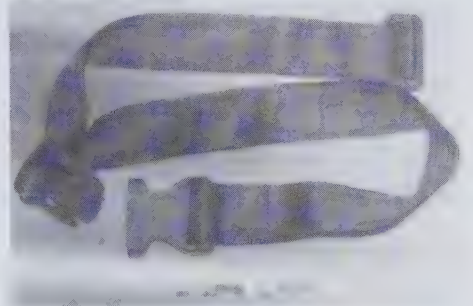


Figure 13. Civil Defence Supply leg strap.



Figure 14. RIPP "Quick Cuff" (very effective when used with the hands bag figured next).



Figure 15. RIPP hands bag (made of orange coloured tear proof fabric).

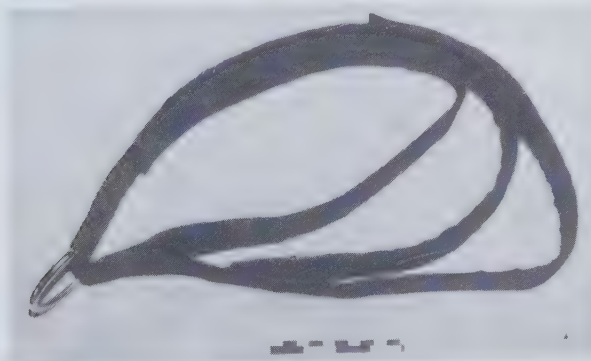


Figure 16. RIPP security belt (the strand from the left hand side is fastened inside the two strands from the other side with "Velcro". There are slots to allow padlocking.



Figure 17. RIPP emergency transport belt. The single plasticuffs are fitted through slots in the belt to secure.

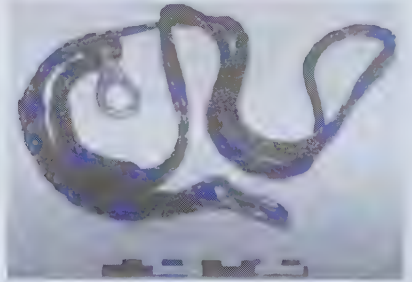


Figure18 RIPP webbing hobble strap

Figure 19 Gall's woven plastic cord hobble

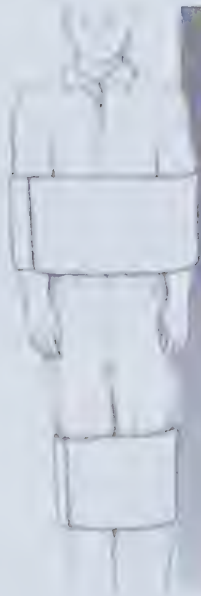


Figure 20. Humane Restraint Co "wrap"
(Humane Restraint Co. catalogue).



Figure 21. VIPERS restraint (the spare arm strap [black] has been wound around the buckles).



Figure 22. Handcuffed prisoner in VIPERS (the spare leg strap [red] is shown free).



Figure 23. "Hugger" arms and body restraint.

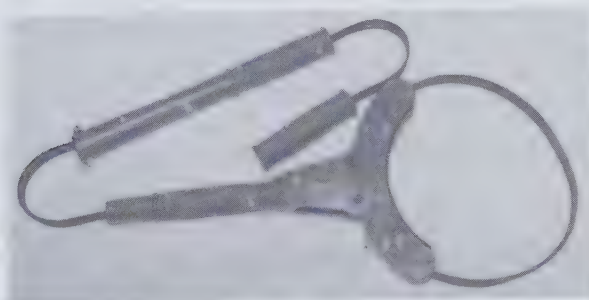
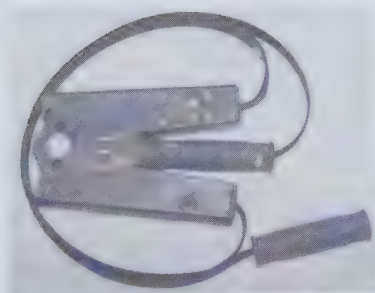


Figure 23a. "Hugger" arm and leg restraints folded for storage in the carrying bag provided.



Figure 24. "Hugger" leg restraint. The key allows the restraint to be opened, on one side completely and on the other side gradually (the plastic handles are bright blue in colour on both arm and leg restraints).

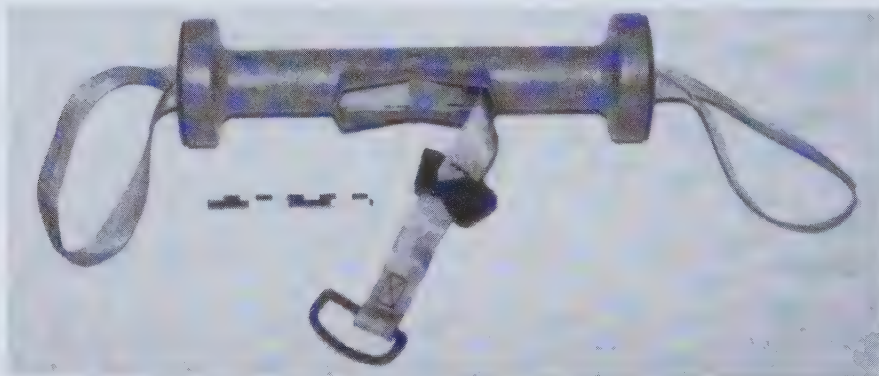


Figure 25. "Hugger" hands restraint. This is locked by means of a lever on the underside of the device when applied. This lock can be got at by the prisoner, though not easily, so the device requires constant supervision (the whole device is coloured bright blue).

8. BELTS AND STRAP RESTRAINTS.

The simplest belt restraint is made of leather or webbing and has a "D" ring situated so that, when the belt is secured around a prisoner's waist and buckled at the back, it is in the front. The prisoner can then be secured with a pair of chain link handcuffs threaded through the "D" ring (Fig.1). Variants of this type of belt can be quite wide, say six inches, and can have lockable buckles. The Bren company of the Czech Republic produces a very ingenious belt which is closed by a horizontal "D" ring through slots. A chain loop then goes through the "D" ring and handcuffs of any type can be threaded through the chain loop to secure the prisoner and lock the device (Fig.2 and back cover picture).

Body belts have been used since medieval times, the modern device usually consists of a stout leather belt fitted with shackles for the hands on either side. The belt is made of two pieces of leather three inches (7.5cm) wide sewn round a thin steel strip about two inches (5cm) wide. There are slots in the belt through which a locking post can be secured with an "end lock" or padlock. Most of the older models have four slots and darby type shackles (Fig.3), a minority of which are "Scotland Yard" pattern. The modern body belts come in three sizes, small and medium having three adjustment slots and large having four such slots. The modern ones usually have swinging bow shackles (Fig.4), though belts with darbies are available. A similar, but lighter version of this type of belt is made by the Humane Restraint Co. which has a "D" ring in the front as well as Peerless shackles at the sides. Its buckle does not lock (Fig.5).

The British firm Hudson produced a simple belt in the 1920's with a leading chain (Figs.6a & 6b). Presumably this was buckled at the back if the hands were in front and at the front if they were behind. Clearly not a restraint to leave an unwatched prisoner in. A much more complicated belt is the modern sophisticated one produced in the United States of America by the Hoffman company, the "Bodycuff". This consists of a wide belt which is lockable and which has handcuffs attached by means of adjustable straps. This allows the hands to be held close to the sides or loosely, with a considerable measure of movement, allowing operations such as the taking of fingerprints (Fig.7).²

Another variation of the belt restraint, used in the U.S.A., is the stun belt. A wide webbing belt is worn around the waist which has a device fitted at the rear capable of discharging a 50,000 volts electric shock and sometimes of emitting a loud and shrill alarm siren, when it is activated by a guard using a remote radio control. A prisoner will be knocked to the ground and completely disabled by the shock. The ring on the front of the belt can be used to secure the prisoner further with handcuffs (Fig.8).

Perhaps the restraint which takes the belt principle to the extreme is the "Bodyguard" restraint produced by Bioguard Systems Inc in the U.S.A. This consists of a padded wrapper which can be strapped around a prisoner's legs and to which a torso harness can be fastened, so that the prisoner is restrained in a sitting position. This is designed to be applied to a struggling or violent subject after handcuffs have been applied behind the back, instead of the dangerous hog-tie with a hobble. The hands can later be fastened with straps to the leg restraint (Fig.9).

The ordinary strap restraints most often seen are those produced by firms such as the Humane Restraint and Posey companies in the U.S.A. The basic restraints are straps fitted with plain or lockable buckles, locking posts or slot and loop mechanisms which close with a smaller strap (Fig.10). These can be combined in a variety of ways and the bed restraint set is a good example (Fig.12). The Humane Restraint Co. also makes an unusual restraint, a modern

equivalent to the medieval bazil, a canvas and leather device weighing ten pounds (c.4.5 kilos) which is strapped, using a lockable buckle, around a subject's ankle (Fig.11).

In British prisons a simple strap restraint was used for women and juveniles instead of handcuffs (Fig.13). Another simple strap restraint, said to be Belgian, is for the legs and consists of two straps, 1 inch (2.5cm) wide and 12 inch (30cm) long connected by a 12 inch (30cm) nickel plated chain (Fig.14a & 14b).

The British firm Down Bros. (London) specialised in the manufacture of medical restraints of a very good quality. The leg restraint figured is made of leather and metal and it seems likely that it was used in the operating theatre for gynaecological procedures (Fig.15). This firm was probably operating somewhere in the period of the late nineteenth to mid twentieth centuries.

- 1. This is a shackle resembling a very small darby type single handcuff, used to lock the end of a gang chain.
- 2. The author apologises for the poor quality of the illustration, which was taken from the firm's advertising material. He ordered a belt from them to photograph for this book and also to provide a sample for his collection, but was unable to acquire one, even though over a two year period the firm several times said it would supply one!

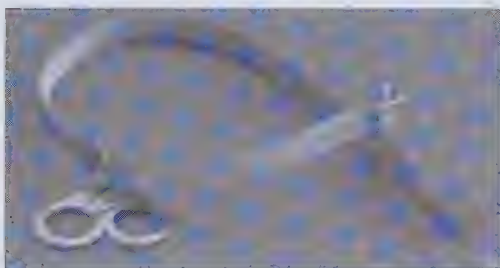


Figure 1. Humane Restraint leather belt (webbing versions are coloured black, brown, blue, red, yellow or green) (Humane Restraint Co. catalogue).



Figure 2. Ralkem belt (see back cover picture which shows a belt in use).



Figure 3. Prisoner in the Hiatt old style body belt which uses darbies and an end lock (Pete McCahon Collection).



Figure 4. Hiatt current pattern body belt, large size, which uses Hiatt 2020 (push button double lock) shackles and a padlock.



Figure 5. Humane Restraint Co. body belt, with non-locking buckle and Smith & Wesson shackles. A central "D" ring is also fitted which can be used with a pair of handcuffs if it so required or a connector chain can be fitted for attaching to leg-irons.



Figure 6a. Hudson body belt (Hudson stock catalogue).

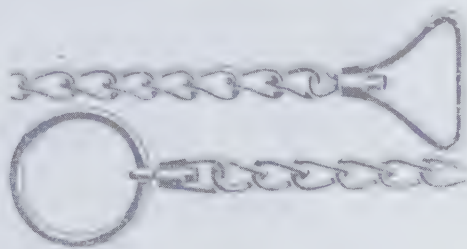


Figure 6b. Hudson leading chain for use with the belt in figure 6 (Hudson stock catalogue).

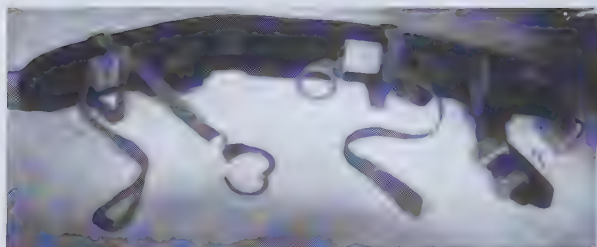


Figure 7. Hoffman "Bodycuff" belt (Advertising pamphlet).



Figure 8. "Stun" belt in use. The box containing the electronic parts is at the back (Guardian).

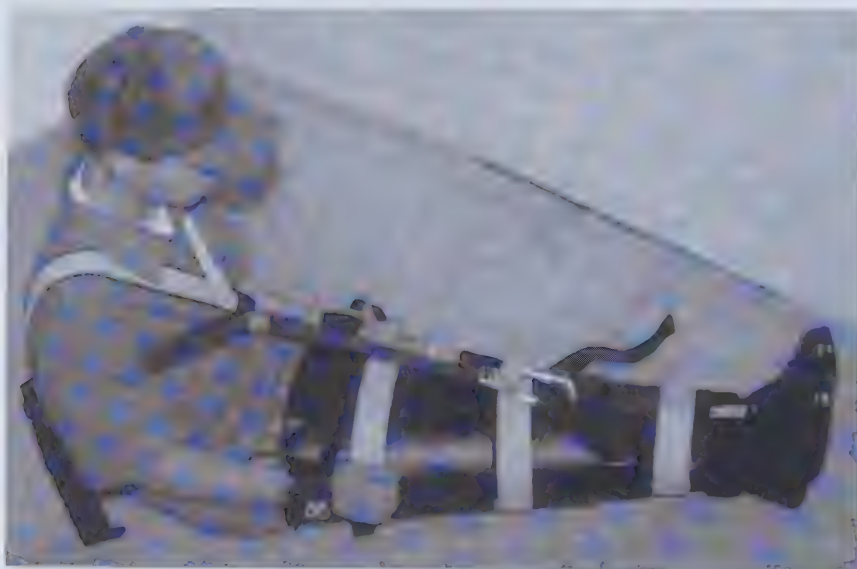


Figure 9. Prisoner in the Bloomberg "Bodyguard" restraint system (the light colour of the straps is bright yellow).



Figure 10. Humane Restraint basic straps. These are secured by narrow straps through the metal slots after these are put through the slots in the strap (Humane Restraint Co. catalogue).



Figure 11. Humane Restraint leg weight (Humane Restraint Co. catalogue).



Figure 12. Humane Restraint bed restraints. Available with locking or non-locking buckles. Also with wider straps (Humane Restraint Co. catalogue).

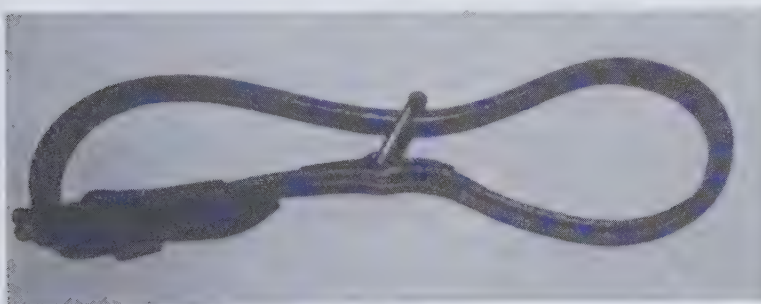


Figure 13. Prison strap handcuff (Scottish Borders Museum, Selkirk).

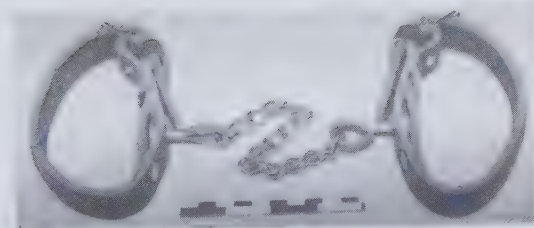


Figure 14a. Belgian leg straps.



Figure 14b. Belgian leg straps in use.

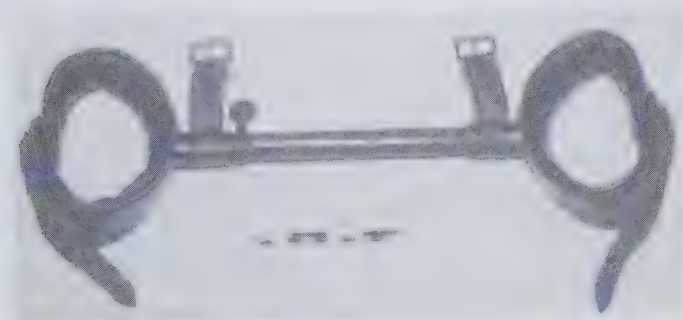


Figure 15. Down Bros. leg restraint.

9. MISCELLANY I

This chapter and the next include material that may seem unusual in a survey of restraint equipment – toys for example. But restraints are often used in play situations, as has been referred to in the Introduction and in more detail later. The line between real restraints used in play situations and items designed specifically as toys is not easily defined. There is also some dispute about the status of some restraints which makes their classification difficult. It is hoped that this section will help to clarify the situation. It may also seem peculiar to include a section on non-mechanical restraints, but these are frequently used before or in conjunction with mechanical restraints. Indeed if one thinks about it non-mechanical restraint is about the co-operation of a prisoner in the restraining process. This co-operation is a necessity, not least for the prisoner, if injury is to be avoided. One has only to imagine the difficulty of riveting irons on a non-co-operative prisoner to see this. It is only the invention of the modern swinging bow restraints that have made possible the easy handcuffing of a resisting prisoner. However, they are undoubtedly restraints as they make people prisoners just as certainly as mechanical ones do. Other material in this chapter and the next is included because of the difficulty in placing it appropriately elsewhere, restraint garments, reproductions and rope ties for example. Hopefully the various sections of the chapters will be self-explanatory.

(a) NON-MECHANICAL RESTRAINT

If one bears in mind the frequent use of restraints as symbolic of power relationships, then this aspect of restraint represents the other side of that coin, so to speak. Power expressed of such potency that mechanical restraint is unnecessary. The simplest examples, perhaps, occur with children. The naughty child in the classroom who is ordered by the teacher to stand in the corner, or the misbehaving child sent to its room by a parent at home. At the other extreme however, is the form of torture known as *Shabeh to Mossad*, the Israeli secret police, which requires the prisoner to stand or sit in extremely uncomfortable positions for long periods without being allowed to sleep.

A very common form of non-mechanical restraint occurs in war situations. Prisoners raise their hands above their heads and stand awaiting their captors' orders (Fig.1). This is usually followed by a period of kneeling or sitting cross legged on the ground, with their hands clasped behind their heads (Fig.2). Prisoners are sometimes made to sit close to a wall, with the arms held tightly back to it and may be blindfolded or hooded as well (Fig.3).

There is a similar set of restraint positions seen in civilian arrest situations, particularly in the United States of America, where prisoners will routinely stand with feet wide apart and hands clasped on or behind their heads whilst being searched or just awaiting handcuffing (Fig.4). Standing, or rather leaning against a wall in what is generally called "the position" (Fig.5) is also common and that position has variations involving cars or furniture. In some very fraught situations, for example, if firearms are used or suspected, prisoners may be ordered to lie on the ground face down with arms and legs spread wide (Fig.6). In a youth penal institution in Texas, U.S.A. the inmates are made to stand whilst awaiting orders outside their cells with feet apart and the hands held in an unusual position behind their backs (Fig.7). This hand position has to be maintained when inmates are marched about the institution.

Non-mechanical restraint has been used as serious punishment in the past in ways that seem like the naughty child situation referred to at the beginning of this section. In olden days the penance chair or repentance stool was often used,¹ particularly for those people whose offences were more against morality or religion than other matters. The offender was ordered to sit on

the chair or stool for quite long periods, several hours at a time. This was usually done in a suitably public place like the nave of the local church so that the offender was exposed to public view and disapproval. A simpler form of this punishment was for the offender to stand in a public place dressed in sackcloth. In 1937 in San Quentin prison in California, U.S.A. a very severe punishment was "The Spot". A circle two feet in diameter was painted on the floor and the offending prisoner had to stand on it without moving (Fig.8). This lasted for periods of four hours, twice a day and half an hour apart, with a two minute toilet break during each session, for as many days as seen fit.²

What was it that makes these restraints so potent? Always, the subject of the restraint knows that the alternative to compliance is much worse. The naughty child fears the anger of the adult and other punishments like being kept in or loss of pocket money. The prisoner of war fears being shot, as do civil prisoners in some countries. Those prisoners undergoing Shabeh and the like fear severe beatings as the alternative. In all these cases the restraint, though not involving mechanical equipment, is real and the prisoners' freedom is restrained.

- 1. William Andrews, *Old Time Punishments*. p 176-9.
- 2. Geoffrey Abbott, *Race, Rope and Red-Hot Pincers*. p 19. When my assistant tried this for half an hour he said it was harder to cope with than being handcuffed and leg-ironed!

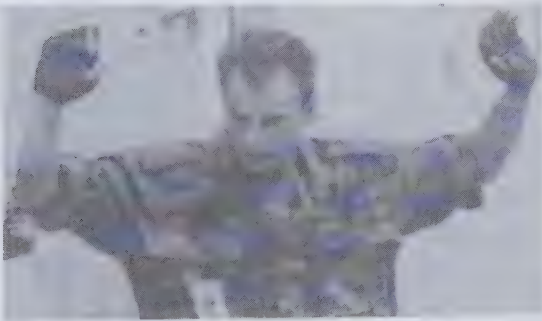


Figure 1. Surrendering soldier (Civil wars in Yugoslavia, late 1990's) (Guardian).

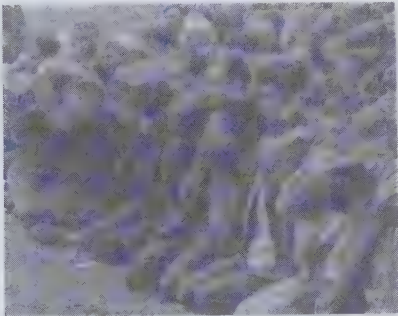


Figure 2. Captured soldiers (Civil wars in Yugoslavia, late 1990's) (Guardian).



Figure 3. Hooded prisoner squatting with arms pressed back to the wall (Posed picture).



Figure 4. Prisoner awaiting orders (Posed picture)



Figure 5. Prisoner assuming the "position" (Unknown).



Figure 8. Prisoner on the "Spot" (Posed picture).

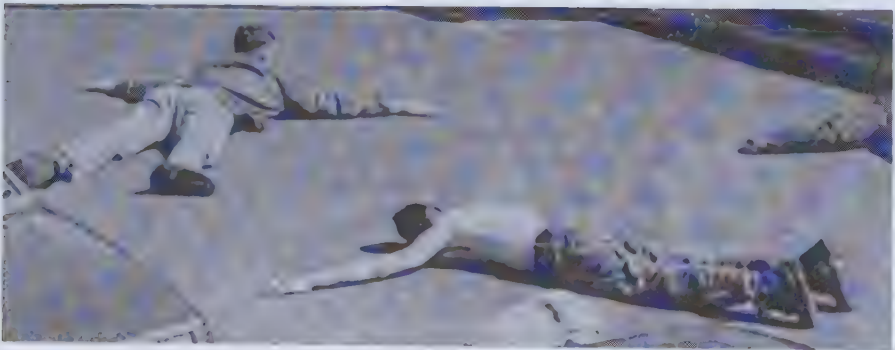


Figure 6. Off duty soldiers suspected of a firearms offence, being arrested (Guardian)



Figure 7. The "Texas" arm position (Posed picture).

(b) RESTRAINT GARMENTS

Restraint garments are clothing items which people are required to wear in certain relatively uncommon situations. The usual situation is that which occurs in institutions where inmates/detainees unnecessarily remove their clothes or refuse to dress. The simplest type of garment is a coat-frock of coarse material, short sleeved and long to below the knee, which fastens up the back with a long hook and loop material ("Velcro") strip in a manner which makes it difficult for the subject to unfasten (Fig.1). Another type consists of a pair of shorts with an elasticated waist (Fig.3) over which a smock (Fig.4) is worn. This is locked onto the subject with a padlock each side at the waist, each padlock also fastening the shorts via the small loops on their waistband. Another padlock closes the neck of the garment. The material used is very strong, virtually tear-proof and the subject cannot remove the garment. Further restraints are not usually applied.

The British Prison Service used the Home Office Approved smock (Fig.5), a thickly padded garment secured with webbing straps at the waist and neck, locked with special buckles (Fig.7). This was designed to keep a naked prisoner warm in the typically cold prison. A similar garment was patented in the United States of America by J.A. Heymans in 1953, though this is rather like a low security strait jacket which should, perhaps, be in the next section (Fig.2).

In the U.S.A. an auxiliary restraint, the transport vest is sometimes used. This is a garment which goes over the head and has two flaps that hang down at front and back, rather like a pinafore. It is secured by woven plastic braid straps into friction buckles. There are two sets of loops, placed off centre and diagonally opposite, front and back, through which a belly chain can be threaded. This prevents the chain from being slipped down over the hips, particularly useful with very stout or rather slim people. It also allows the chain to be put on a little more comfortably, which may be an important consideration when used on a prisoner who is likely to be in a restraint a long time if being transported far. Several types are available, the one illustrated was made by "Eagle" (U.S.A.) (Fig.7 and back cover picture).

During part of the nineteenth century, it was the practice in British prisons to hood prisoners during exercise periods so that they could not see each other. They were also forbidden to speak. The hoods were made of leather and covered the top of the head to down over the eyes, then were fastened by straps under the chin, the specimen figured is preserved at Lancaster Castle (Fig.8). Another version of this was a special cap whose peak could be pulled down over the face.

Whilst not a garment as such, perhaps the electronic tagging devices that have become popular with the authorities in the late 1990's can be considered in this section. These are of two basic types, that worn on the wrist (Fig.9) and that worn on the ankle (Fig.10). They operate by sending a radio signal to a pick-up device linked via the telephone to a central receiving station where it can be monitored. The wearer has to remain near to the pick up device, usually at home, then if that area is left the wearer is perceived as having absconded from that restraint. The electronic tag is, therefore, somewhat akin to the non-mechanical restraints referred to in the previous section of this chapter.



Figure 1. Velcro locked smock
(bright blue in colour)
(The Galleries of Justice)

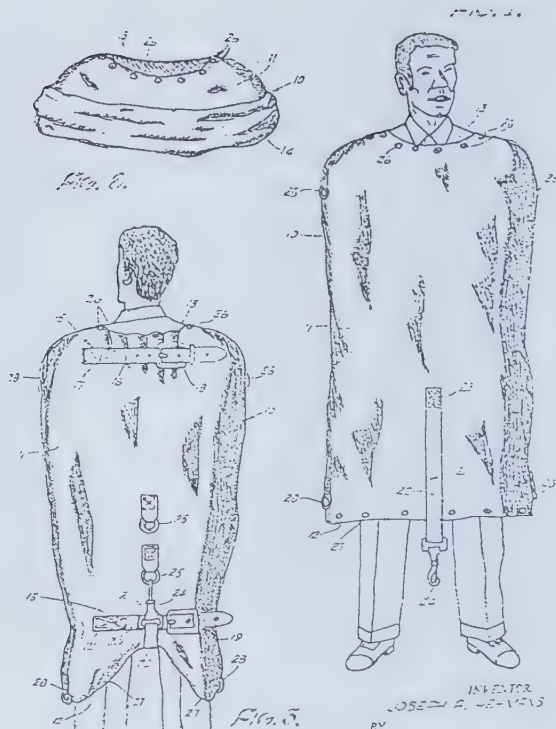


Figure 2. Heyman's restraint garment patent drawing.



Figure 3. Restraint garment shorts (note the side tabs with three adjusting holes for padlocking)
(The Galleries of Justice).

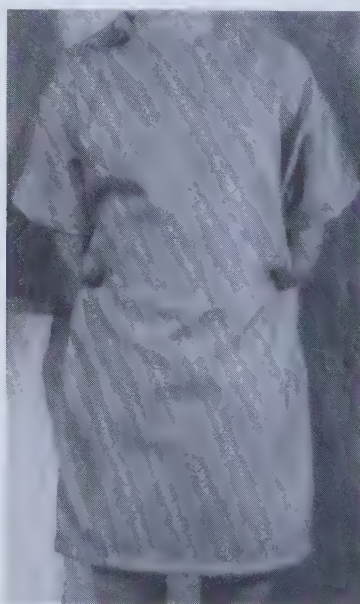


Figure 4. Restraint garment smock (This has a series of holes at each side to facilitate adjustment when locking)
(The Galleries of Justice).



Figure 5. Home Office pattern restraint smock (The Galleries of Justice).



Figure 6. Locking buckle as fitted to restraint garments (The Galleries of Justice).



Figure 7. Eagle transport vest (see back cover picture for front view and colour).



Figure 8. Prison hood (Lancaster Castle).



Figure 9. Electronic tagging device for the wrist (Guardian).



Figure 10. Electronic tagging device for the ankle (Guardian).

Straitjackets are made in two basic types. The standard pattern has a tunic type jacket which is usually fastened at the back and which has very long closed end sleeves. When the jacket is placed on the subject, the arms are completely contained in the sleeves so that the hands cannot be used. The arms are crossed in front, the sleeve straps are then taken round and fastened at the back. Further restraint can be added in the form of crotch straps to prevent the jacket being pulled off upwards and elbow straps to prevent the arms being worked over the head. These jackets are usually made of heavy duty canvas with leather straps and reinforcement (Fig.1). A softer version fastened with removable leather straps (Fig.2), webbing straps or tape ties is made for hospital use.

The "Home Office Pattern" straitjacket has a similar tunic type basic construction with fastening at the back. However, there are no sleeves, but long pockets are sewn inside the jacket into which the arms are inserted and from which they cannot be withdrawn when the jacket is securely fastened (Fig.3). These jackets are not so adjustable as the standard type so they are made in several sizes. Canvas leg bags fitted with adjustable straps were also made to add to the straitjacket to immobilise the body completely.

A very complicated device that carries the straitjacket idea to an extreme is the restraint chair. These were used in the nineteenth century for the restraint of violent prisoners or the mentally ill. Lancaster Castle has two fine examples, fitted with devices to which straps can be attached to secure the arms, legs and waist (Fig.4). In modern times, AEDEC Inc. in the U.S.A. have produced a restraint chair (Fig.5). This has a variety of strap attachments, including some to make it suitable for juveniles or "persons of small stature" (Fig.6). It also has detachable fitments that allow it to be wheeled around.



Figure 1. Standard strait jacket (this has had elbow straps added for extra security).



Figure 2. Humane Lynch strait jacket (Humane Restraint Co. catalogue).



Figure 3. Home Office pattern strait jacket (Galleries of Justice).



Figure 4. Restraint chair (Lancaster Castle).

The right hand picture shows a close up view of one of the bars at the side and rear which accommodate the restraining straps. The bars for the ankle straps are placed horizontally at the bottom.



Figure 5. AEDEC restraint chair
(Advertisement pamphlet).



Figure 6. AEDEC restraint chair for juveniles or
persons of small stature (Advertisement pamphlet).

(d) ROPE TIES.

Rope and cord are the earliest types of restraint equipment and the ways in which they can be used are virtually infinite. But there are a few ties which form the basis of all others. Limbs are either tied together or tied to things and then various other attachments can be added. Perhaps the simplest tie is one of the earliest, the pinion so much used by the ancient Egyptians. The elbows are tied behind the back as closely as possible (Fig.1). This is very painful and if tied too tightly and applied for too long the restriction of blood circulation can cause permanent damage. This tie is much used in modern times too, in the Korean¹ and Vietnam wars for example. Another much used and simple tie is the "hog-tie". The wrists are tied together behind the back and then the bound ankles tied to them (Figs.2 & 3). This tie can cause serious problems and even death in certain situations.²

Magicians and escapologists often use rope ties and some interesting trick ties have been invented. Readers are referred to the many books on the subject, such as those by Burling Hull and J.C. Cannell. One simple trick tie has the arms folded across the front of the body, in much the same position as if in a standard straitjacket and then tied across the back. It is possible to work the arms up over the head and escape. Even more impressive is that the performer can so free himself if the tie is not put on too tightly, perform some action and then reposition the restraint. It is not surprising that fake spiritualist mediums like this tie.

Until 1923 a standard punishment in the British army was Field Punishment No.1.³ This required the sentenced soldier to be tied securely to a fixed object. This could be a post, but was more commonly a gun carriage wheel, to which a soldier would be tied spreadeagle fashion. The soldier was so tied for most of the working day up to a maximum 7 days if sentenced by a company commander, or 28 days if sentenced by a higher authority. Field Punishment No. 2 was similar, but it was not required that the soldier be secured to a fixed object. A similar set of rules was used in the Royal Navy (Fig.4).

Students of knotting also like to produce fancy handcuff knots and there are several kinds of these (Fig.5). However the extreme example of this sort of thing is the Japanese Samurai art of Hojojitsu. This is a somewhat complicated method of tying prisoners which uses ropes of traditional types according to a ritual system. A short rope, the hayanawa, about 15 feet (4.4 m) long is used at the arrest stage and some Japanese policemen still carry one. Also used is a long rope, the hon-nawa, made in five standard lengths varying from 30 to 80 feet (about 8.8-23.5 m) and in different colours for use in each season, blue for spring, red for summer, white for autumn and black for winter. On certain special days a yellow rope is used. Knots are considered shameful, restraints using knots are considered to be bondage not to be used on persons of high rank and so are only used for convicted criminals. As a result, some very fancy "wrappings" were invented to use on high rank persons which are very secure, but use no knots. The Samurai themselves never used Hojojitsu, but relied on trained servants or constables to do the tying. There are four basic rules:-

1. Not to allow the prisoner to escape.
2. Not to cause any injury.
3. Not to allow others to see how the ties are done.
4. To make the tie pleasing to the eye.

There are very many kinds of ties that can be done, the two hayanawa ties illustrated are examples (Figs.6 & 7).

1. Philip Chinnery, *Korean Atrocity*.
2. Fligner et al. *Effects of positional restraint*.
3. J.M. Brereton, *The British Soldier*.



Figure 1. Prisoner with arms pinioned (posed picture).



Figure 2. Prisoner in a basic "hog-tie" (posed picture).



Figure 3. Military hog-tie (often done with the ankles crossed before tying) (U.S.Army manual "Combatives").

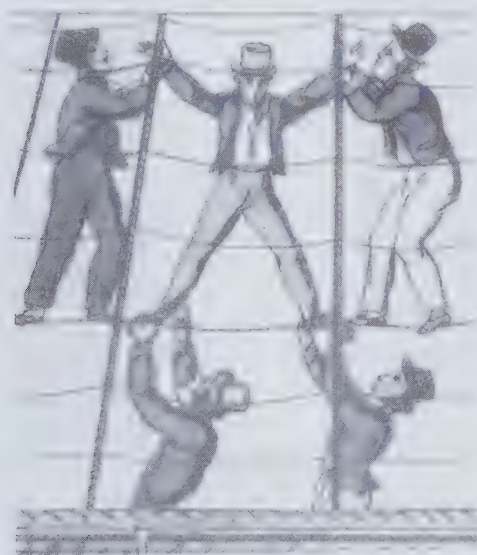


Figure 4. Old drawing entitled "A midshipman is seized up to the shrouds as a punishment".

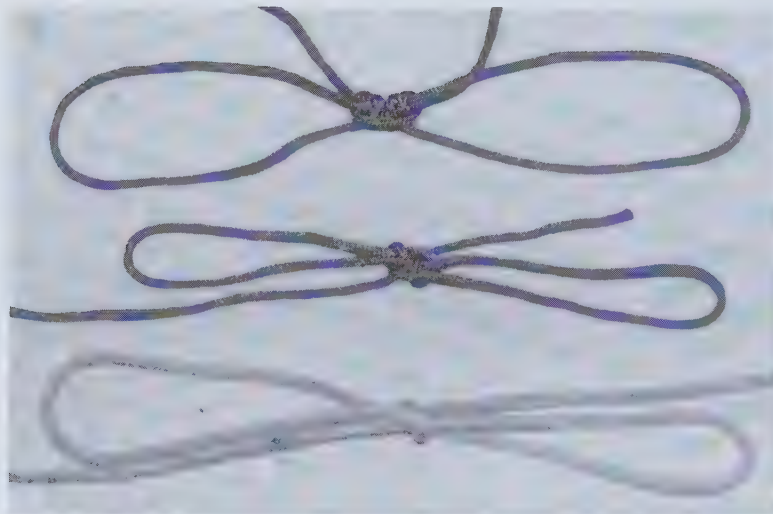


Figure 5. Some handcuff knots.



Figure 6. Hojojitsu tie, the "Cross" (posed picture).



Figure 7. Hojojitsu tie, the "Girdle" or "Diamond" (posed picture).

(e) EXECUTION AND PUNISHMENT RESTRAINTS.

Over the ages an enormous number and variety of restraints have been used in executions and punishments. One would need a whole book to deal with this aspect of restraints and the reader is referred to books such as those by William Andrews and Karen Farrington. This chapter will confine itself to a selection of equipment used in modern times.

In England the method of capital punishment used was hanging and Albert Pierrepont, one of the most famous executioners, devised a system of straps for securing the prisoner that enabled him to work very fast – he claimed that an average execution, from the time he entered the condemned cell to the pulling of the drop lever took 10-15 seconds!¹ The wrist strap has two buckles (Fig.1) and is put onto the prisoner's left wrist behind the back by the executioner, securing it with the first buckle. His assistant seizes the prisoner's right wrist and pulls it into place so that the strap's second buckle can be fastened. A plain strap is used by the assistant executioner to secure the prisoner's ankles when on the scaffold trapdoor (Fig.2).

American executioners use a variety of different strapping systems for securing the condemned prisoner ready for hanging. One example is the type described in regulations for the military.² This consists of a belt with two small straps which hold the wrists on either side when it is fastened around a prisoner's waist and buckled at the back (Fig.3). A collapse board with three straps is also described for use if the prisoner is too overcome to stand upright (Fig.4). The majority of executions nowadays in the United States of America seem to be by lethal injection, for which a special trolley or gurney to which the prisoner can be strapped is used (Fig.5).

Modern punishment equipment is that used for flogging or birching. Typical examples are the flogging triangle and the birching stool. In Wormwood Scrubs prison an apparatus called a triangle was used for floggings. The prisoner, stripped to the waist, was strapped to it in a spreadeagle position (Fig.6). A more complicated version of the triangle was later developed, an example of which is preserved in the Prison Service Museum at Newbold Revell and a replica at the Galleries of Justice Museum in Nottingham (Fig.7). In Victorian times, at Newgate Gaol in London, a box like construction was used (Fig.8) which is also preserved at the Prison Service Museum.

An unusual punishment restraint (which is really a kind of non-mechanical restraint) is illustrated on a fresco at Pompeii (Italy)³ a method of securing a slave for flogging. The slave is held by the arms over the shoulders of another slave who is bending over slightly. Another slave kneels behind him holding his ankles so that the prisoner is held fast and ready to be beaten (Fig.9). This method was also used in Britain for the judicial birching of boys well into the twentieth century and was probably the commonest way of administering it. However, several places used stools, such as the one preserved in the West Midlands Police Museum (Fig.10) or tables (there is one in the museum at Fort William in Scotland) or boxes like the one preserved in the Galleries of Justice (Fig.11) to which the victim could be strapped.

Branding was a common punishment in olden days and there is a relic of such punishment preserved in the courtroom at Lancaster Castle. In the dock is a restraint for holding a hand in place for the branding iron to be applied (Fig.12) (M is for malefactor, other letters used include F for forger and A for adulterer).

In the British Army, restraints have been used as punishments in their own right and detailed rules for their application were devised.⁴ Until 1923, Field Punishment Nos. 1 & 2 were used (see earlier section on Rope Ties). After then, in the field, i.e. in action, handcuffs or straps

were used. Elsewhere, wherever possible a detention centre was used and there strict rules were laid down as to when and what restraints could be used. When restraints were used, whoever authorised them had to fill out a special form specifying type, duration and method of application.

1. Albert Pierrepoint. *Executioner Pierepoint*.
2. Anon. *The Executioners' Handbook*.
3. Otto Keifer. *Sexual Life in Ancient Rome*. p 72. This book has an interesting chapter entitled *The Romans and Cruelty* which describes Roman punishments in some detail.
4. *The Queen's Regulations*.



Figure 1. Replica of Albert Pierrepoint's wrist strap.



Figure 2. Replica of ankle strap (posed picture).



Figure 3. Replica U.S.A. style execution restraint belt (posed picture).



Figure 4. Replica collapse board (posed picture).

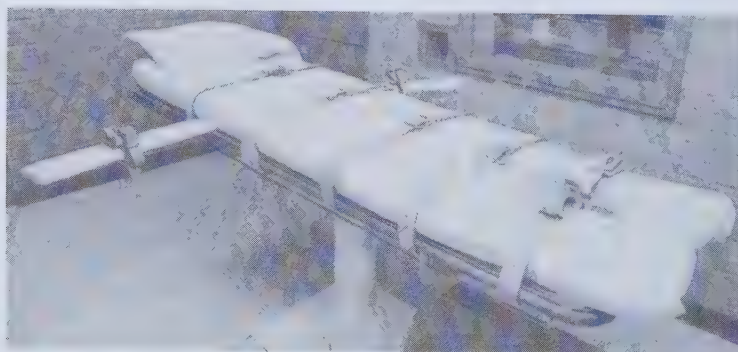


Figure 5. Lethal injection gurney (Guardian).



Figure 6. Flogging triangle in Wormwood Scrubbs prison (London) (Anti corporal punishment leaflet).



Figure 7. Replica flogging apparatus at the Galleries of Justice, Nottingham. (posed picture).



Figure 8. Flogging box from old Newgate prison in London (anti corporal punishment leaflet).



Figure 9. Slave flogging position (posed picture).



Figure 10. Birching stool in the West Midlands Police Museum, Birmingham.



Figure 11. Birching frame in the Galleries of Justice, Nottingham



Figure 12. Branding clamp situated in the "dock" in the courtroom at Lancaster Castle.

(f) GAGS.

Gags do not seem to have been used to any great extent in modern times and were not commonly used earlier. Perhaps the old time object that is seen most often is the headcage or "scolds' bridle" which usually includes some form of gag (Fig.1). The Correctional Service of Canada Museum in Kingston, Ontario, exhibits two gags which were said to have been used in the early 1930's (Fig.2) usually on noisy prisoners who had already been put in straitjackets. One is a simple leather covered metal bar with eyelet holes at each end for the securing cord and the other is a short wooden rod to which is attached a solid rubber block and leather straps. However, such modern items are rare.

There was an instance of very public gagging in the United States of America in the 1960's at the trial of a black activist. In order to silence his interruptions of the proceedings, the judge ordered him to be gagged (Fig.3). The illustration is of a stage re-enactment and some sort of medical dressing appears to have been used. (More recently in the U.S.A. a judge ordered a similarly very vocal defendant to be fitted with a stun belt which he could operate to restrain him [see the Belts and Strap Restraints chapter]).

What is said to be a U.S. Army training manual for special forces' demonstrating how to deal with captured enemy soldiers includes instructions on how to improvise gags (Fig.4). It seems unlikely however that this is common practice in the field.

Although not a gag, but related, is the anti-spitting mask. Disposable paper ones are available in the U.S.A. (Fig.5 and back cover picture). Rather more complicated is a hood-like gadget made of nylon mesh with a solid panel over the mouth area (Fig.6).

1. U.S.Army manual "*Combatives*" FM21-150.

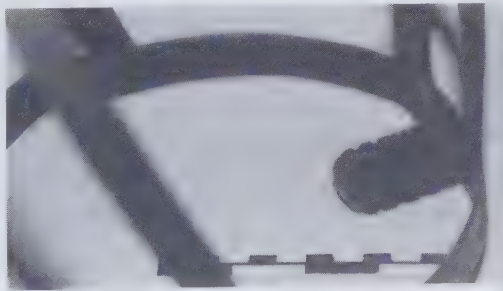


Figure 1. Mouthpiece in a medieval head cage.

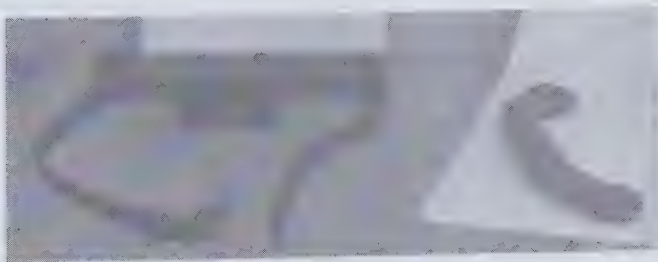


Figure 2. Gags in the Correctional Service of Canada Museum (photograph: Colin Parsons).



Figure 3. Defendant gagged in court (Guardian).

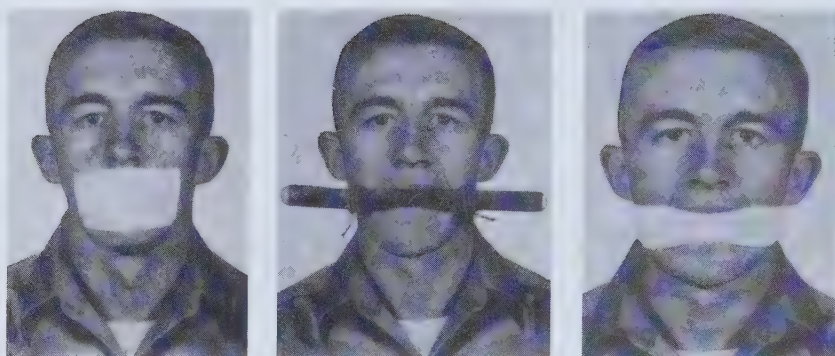


Figure 4. Military prisoners gagged with adhesive tape, a stick and a handkerchief (U.S.Army manual "Combatives").



Figure 5. Disposable paper anti spitting mask.



Figure 6. Humane Restraint Co. "TranZport" anti spitting hood (Humane Restraint Co. catalogue).

10. MISCELLANY II.

(a) TOYS, NOVELTIES & JEWELLERY

Some collectors regard handcuffs such as the cheap Takeda models produced in Japan and Taiwan as toys and they are frequently seen in toy and joke shops. They also seem to be the handcuff of choice for the perpetrators of "stag night" pranks. However they were designed as serious handcuffs and certainly when fire brigades are called to release the unfortunate victims of these pranks they often find it necessary to use heavy duty bolt cutters to free them. Perhaps the issue is clouded by the fact that in recent years many of the toys that have become available are Takeda copies. These are of varying quality, some are almost as strong as the original, one type illustrated is labelled on the box "Adult Carnival Item" (Fig.1) but most are very flimsy. One model even has a quick release lever so that it can be opened without a key (Fig.2).

The quick release mechanism is the sign of the toy (with the exception of the training items described later) and almost all the models illustrated are so equipped. Most toy handcuffs date from after World War II, but a sturdily made metal model frequently found was made before then, in the late 1930's (Fig.3). Toy handcuffs generally appear to be a twentieth century phenomenon but Dick Norman in *Modern Handcuff Secrets* shows a "curiosity", a shackle patented in the United States of America by James Pettibone in August 1882. It is not lockable and was intended for use on the stage so it was a kind of toy.

The earliest patents in the U.S.A. for toys designed for children to use are those of T.J. Hoglund (Fig.4) in 1929 and 1931 and J.E. Blake in 1932. It seems likely that toys dated before then are very rare indeed.

Toy handcuffs are frequently made of plastic and these seem to be much safer for children to use than many of the metal ones, some of which are so badly made that there is a considerable risk of being cut by the very thin metal (Fig.5). One toy (Fig.6) made from brown plastic material is equipped with a speaking mechanism so that when applied it says "LOCK HIM UP" and "THROW AWAY THE KEY", clearly designed for children. Perhaps the smallest toy handcuff is that sold with the "Action Man" doll which measures about 3 inches (7.5 cm) long (Fig.7).

Another toy plastic handcuff (Fig.8), one of the Takeda copies, is lined with red imitation fur and labelled "Love Cuffs", one doubts that these were intended for children. They are copies of the "Love Cuffs" that use one of the stronger Takeda imitation handcuffs (Fig.9) that are very definitely not designed for children to use!

There is a type of toy, probably better defined as a novelty, in the form of a pair of handcuffs, usually attached to a suitably decorated card or box, which is sometimes given to a wedding couple (Fig.10). In this context also one may find the occasional "ball and chain" (Fig.11). There are various other jokes or novelties, usually made of plastic but sometimes rubber, like the Swedish "heavy" manacles (Fig.12) and even occasionally metal. These are not designed for children but seem to be toys/joke items for adults to use, most commonly at weddings, reinforcing the idea of the use of handcuffs as symbols. This symbolic use is carried a stage further by the use of such symbols in jewellery. The usual items seem to be tie-pins, tie-clips and earrings (Fig.13) but bracelet charms are also made. One sometimes sees people wearing a pair of real handcuffs as a fashion item, for example, as part of a belt.

Another type of novelty is the key ring, either as a small single shackle attached to a suitable key holder (Fig.14) or as a miniature pair of handcuffs (Fig.15).

Most of the toys available nowadays seem to come from China or Taiwan, which would account for the popularity of the Takeda design, like the most common plastic type (Fig.16). Some of the earlier ones dating from the 1960's and 70's are of designs which do not look like any real handcuff (Figs.17 & 18). Another type looks very much like a standard "Peerless" pattern, though the linkage is wrong (Fig.19), but a recent Chinese toy looks more like the real thing (Fig.20). There is an interesting toy that was obtainable sometime in the 1960's as part of a breakfast cereal promotional series of giveaway items about the police, a model "darbies" type handcuff made of metal with a clever quick release mechanism (Fig.21) which opens the handcuff by pressing the button which forms the top of the lock case.

A most unusual item is a pair of miniature handcuffs (Fig.22) in the Chris Gower collection. These were made by an inmate of a Russian prison near Vladivostock. Apparently the inmates are allowed to make all kinds of objects to sell, some very beautiful, so as to be able to buy extra food and cigarettes etc. These miniature handcuffs were acquired by a Russian policeman who sent them to his brother in England.



Figure 1 "Adult Carnival Item "

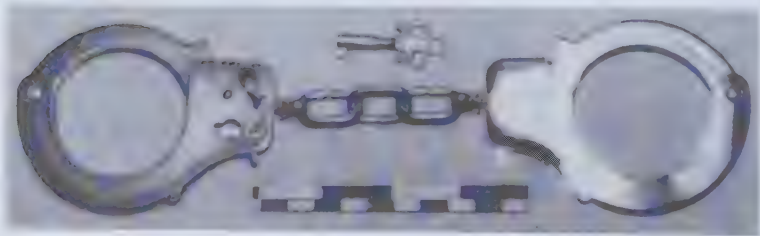


Figure 2 Imitation Takeda toy handcuffs (note the quick release button on the lower side of the lock case)



Figure 3. 1930's toy handcuffs.



Figure 4. Hoglund toy handcuffs (E-Bay).

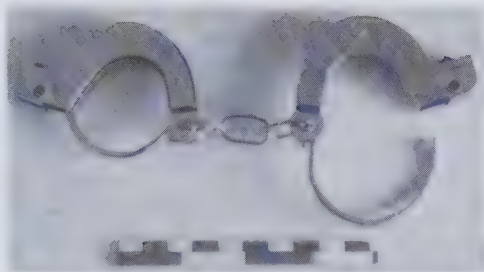


Figure 5. Thin metal toy handcuffs.

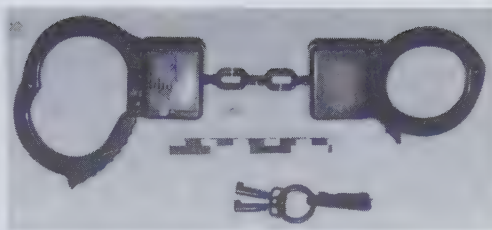


Figure 6. Talking handcuffs.

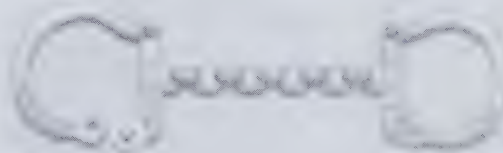


Figure 7. "Action Man" handcuffs.



Figure 8. Plastic "Love Cuffs".



Figure 9. Metal "Love Cuffs".

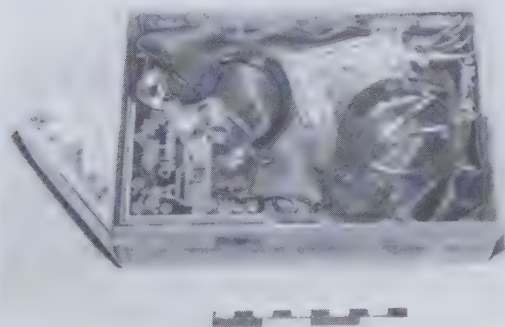


Figure 10. Wedding handcuffs.

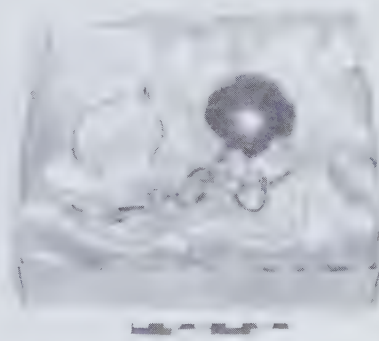


Figure 11. Ball and chain.

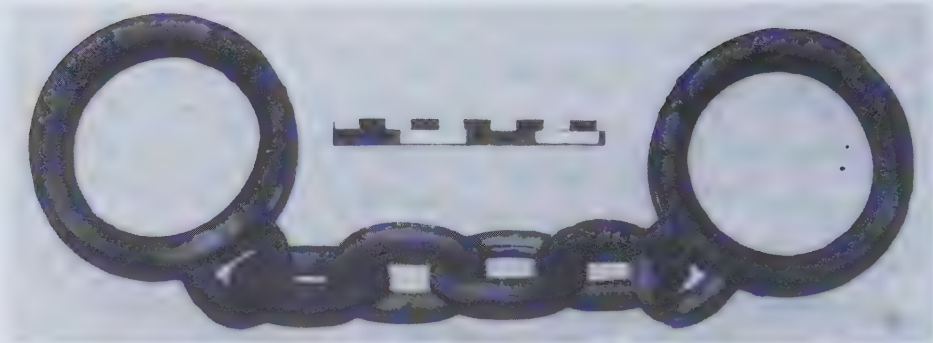


Figure 12. Swedish rubber manacles.

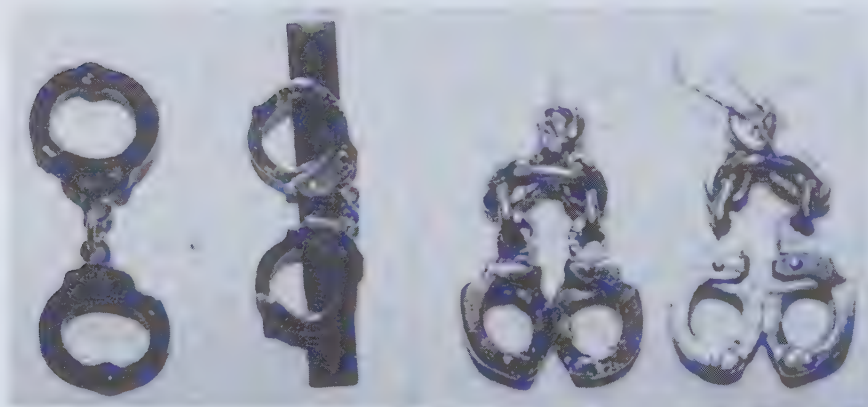


Figure 13. Tie clips and earrings.



Figure 14. Key ring.



Figure 15. Miniature handcuffs key ring.

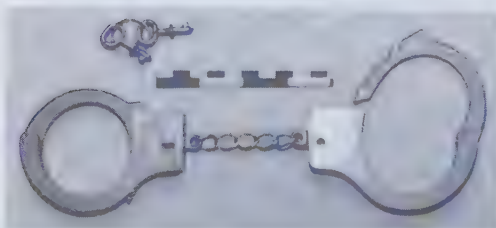


Figure 16. Plastic imitation Takeda toy handcuffs.



Figure 17. Metal unusual pattern toy handcuffs.



Figure 18. Metal unusual pattern toy handcuffs.



Figure 19. Toy Peerless type handcuffs.

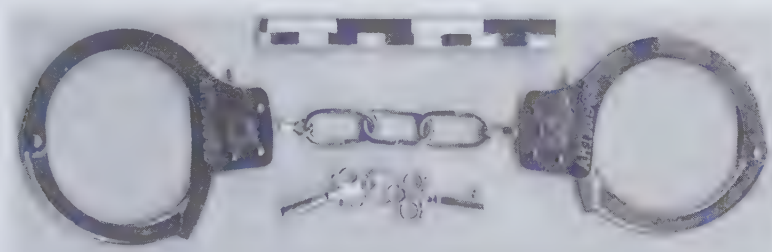


Figure 20. Toy Peerless type handcuffs (Chinese).

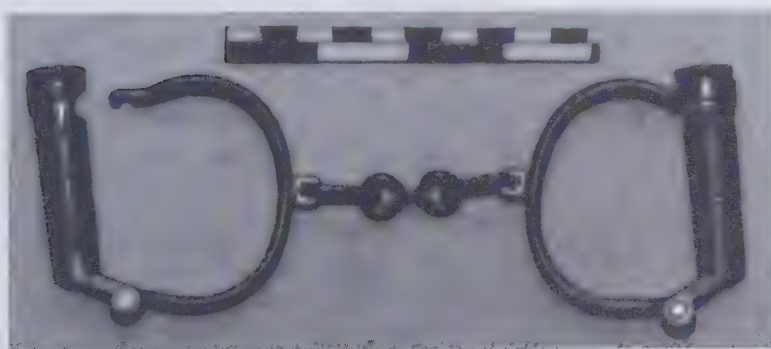


Figure 21. Toy darbies.



Figure 22. Russian miniature handcuffs.

(b) REPRODUCTIONS.

The interest in old restraints is so great that the number of collectors who want to acquire them exceeds the number of such things available. As a result there has grown a market for reproduction items and with that the possibility that unknowing collectors may be fobbed off with fakes. This is particularly true with ancient and medieval items. However, there are reputable makers who advertise their wares as reproductions and these provide a means whereby it is possible to experience something of the thrill of owning some of the rare pieces and seeing how they work. Some collectors are of the opinion that reproductions have no place in their collections and that seems a reasonable position to take. However the author is of the opinion that these items can be collected, provided that they are identified as such, indeed it may be said that they have an interest as collectable items in their own right.

In Britain, probably the best known supplier of reproductions is the firm Feters of London. They make a range of irons which they call reproduction eighteenth century equipment, which use a simple screw lock needing an Allen key to open (Fig.1). They also make a good reproduction "Lilly" pattern handcuff (Fig.2). Also available from them are what may perhaps be best described as interpretations of some medieval items, such as the "Scavenger's Daughter", the Norwich Castle type collar and handcuffs (Fig.3) and various types of metal belt (Fig.4).

Several firms in the United States of America have produced reproductions. A firm called Ironmasters produces a range of items rather like those of Feters, but of much heavier construction and with more sophisticated locks. PX Direct supply a range of items which they call "chain gang" equipment (Fig.5) and uniforms to match.

Some of the best reproductions come from an Australian, Ian McColl, trading as Stockade Locksmiths. He specialises in famous handcuffs and leg-irons of great rarity in the original, such as the Houdini "Mirror" challenge handcuff (Fig.6). He has also made items that were patented but not put into commercial production, such as the letter combination lock handcuffs patented by Lorey in 1912 (Fig.7), the Kalkhe 1892 patent handcuff (Fig.8) and the fingercuff patented by Hedrick in the same year (Fig.9). Other examples of his output are the Horst Stein "Moabit" handcuffs and leg-irons (Fig.10) and a pair of Palmer handcuffs (Fig.11). The "Romer" collar and cuffs set in the Jon Oliver collection is not totally a reproduction as that company never made a collar (Fig.12). A very interesting "one off" item is the copy of the Roman handcuff figured in the author's earlier booklet *Handcuffs & Other Restraints* and in the Ancient Restraints chapter, made by him for the author (Fig.13). He also made for the author a copy of the rare old Swiss bagno type handcuffs (Fig.14) using a picture of the original from a book as pattern (Fig. 15).¹

Another interesting reproduction, by Chris Gower, is of the scissors type of handcuff invented by Hilliard (Fig.16). He also made the replica of the Union Hardware "clog" shackle, a restraint featured in the Stanley Smyth Collection catalogue (Fig.17) and the Wood chain handcuff (Fig.18). Last of the metal restraints featured is a replica of the "bagno" handcuff, also featured in the Smyth catalogue, made by a local blacksmith for the author (Fig.19). The final item is of mixed materials, a copy of the Hiatt body belt made by Feters (Fig.20).

1. Walter Loertscher, *Les Polices Cantonales En Suisse*.



Figure 1. "Fetters" single manacle.



Figure 2. "Fetters" Lilly irons.



Figure 3. "Fetters" Norwich Castle type restraint.

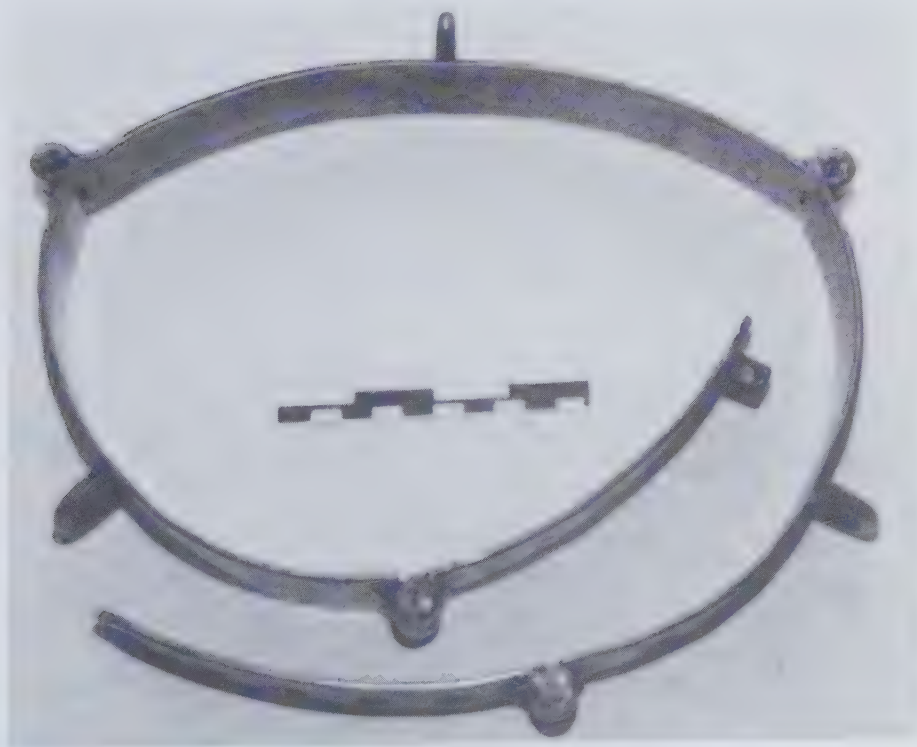


Figure 4. "Fetters" belt. The end of the belt at the bottom of the picture has five adjustment holes between the end and the first hinge, through which the holed lug at the other end can be padlocked.

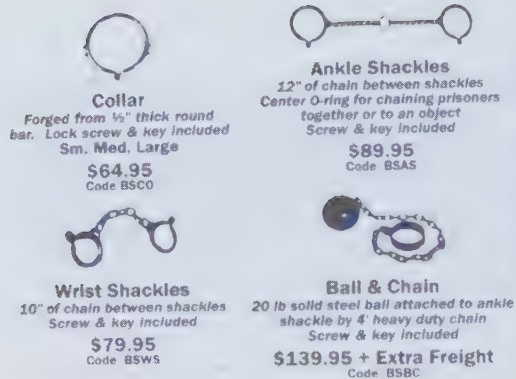


Figure 5. Restraints in the PX Direct catalogue.



Figure 6. Stockade Locksmiths' reproduction "Mirror" handcuff (Ian McColl photograph).



Figure 7. Stockade Locksmiths' reproduction Lorey handcuff (Chris Gower Collection).

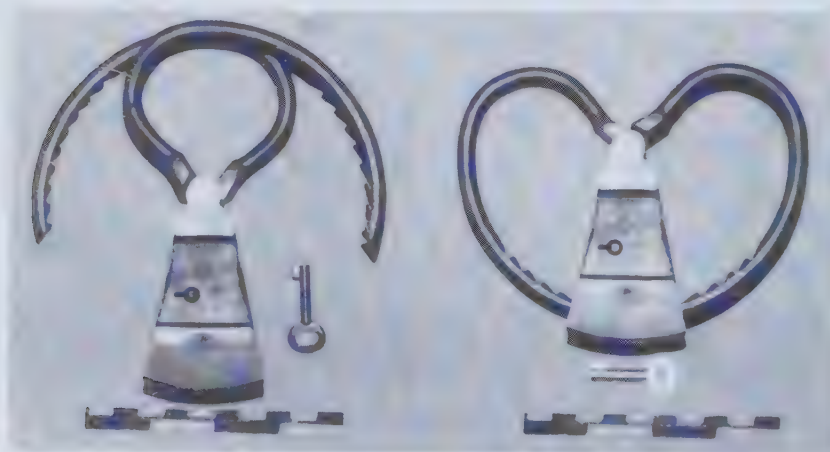


Figure 8. Stockade Locksmiths' reproduction Kalhke handcuff (Chris Gower Collection).

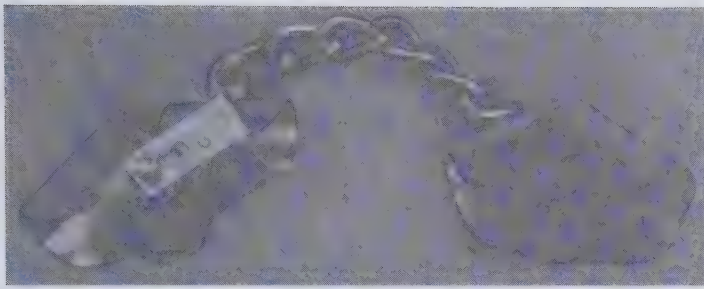


Figure 9. Stockade Locksmiths' reproduction Hedrick finger-cuff (Ian McColl photograph).



Figure 10. Stockade Locksmiths' reproduction Horst Stein Moabit handcuffs and leg-irons. The originals had black rubber not clear plastic tubing covering the chains.



Figure 11. Stockade Locksmiths' reproduction Palmer shackle, size 3.



Figure 12. Stockade Locksmiths' reproduction/creation Romer combination set (Jon Oliver Collection).

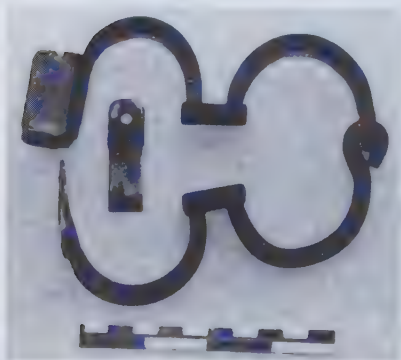


Figure 13. Reproduction Roman handcuff made by Ian McColl for the author.



Figure 14. Reproduction Swiss handcuff made by Ian McColl for the author.



Figure 15. Photograph in *Les Polices Cantionales En Suisse* which Ian McColl used as a pattern for the handcuff in figure 14 above.



Figure 16. Reproduction Hillyard manacle made by Chris Gower. The original design did not include the swivel on the side of the lock case.



Figure 17. "Clog" shackle made by Chris Gower, using the drawing in the Stanley Smythe catalogue as pattern.



Figure 18. Wood chain handcuff made by Chris Gower.



Figure 19. Reproduction "Bagno" handcuff made for the author by Michael E Roberts of Miserden (Glos.) using the drawing from the Stanley Smythe catalogue as pattern.



Figure 20. Prisoner in a "Fetters" copy of Hiatt's body belt. The significant differences are that it does not have the steel liner of the original and the locking slots are vertical instead of horizontal (it has been applied with the lock wrongly fastened in front so as to show all features of the belt).

The items in this section are restraint related gadgets that have been invented and patented, but which have usually never actually been made or used. They illustrate the many ways in which people seem to have thought about prisoners and offenders over the years which show aspects of human psychology such as those discussed in the later chapter on that subject. The first gadget is probably the most frighteningly bizarre. In 1895 J.R. Wherry invented a device which could be strapped onto the back of a prisoner being transported. So long as the prisoner only walked all was well, but if the prisoner chose to run the jogging motion would trigger the mechanism and set off a needle sharp device which would penetrate the back and probably kill the unfortunate wearer! (Figs.1 & 2)

A most ingenious device was invented by R.B. Long in 1938 for preventing hoax fire alarms. This is a box like structure into which it is necessary to place one's hand in order to set off the alarm. When the hand is in the box and the alarm activated a handcuff like device closes and secures the hand, presumably until the fire brigade arrives with the key (Fig.3). It is to be hoped that the intention was to use this on street fire alarms rather than in the building likely to be on fire!

V.P. Thompson's power activated manacle seems to have been invented to assist in the arrest of persons presumed too dangerous to be approached closely. The device could be mounted on the roof of a police car and activated remotely from within the safety of the vehicle. Presumably the prisoner could be ordered at gunpoint from within the car or by another officer a safe distance away, to place the hands in the device and then it could be activated (Fig.4). Taking electronic control of restraint a stage further are manacles patented by I-Chen Lai in 1978. This is a pair of handcuffs, one shackle of which is fitted with an electric shock discharger and the other with a receiver to take a control signal from a remote transmitter (Fig.5). The prisoner can be given an electric shock if escape is attempted. This is very much the principle used in the stun belt referred to in an earlier section of this chapter which has been made and used.

Leg restraints of the splint variety, called gyves by one inventor, have featured in several patents. Typical are those of P.G. Nagle of 1938 (Fig.6) and Karl Bremer of 1980 (Fig.7). Most allow a prisoner to walk when the gadget is locked in a straight position, but can be unlocked at the knee to allow the prisoner to sit in a car or in court etc. Some can be put on under clothes so that a prisoner can be transported in public view without anyone noticing the situation as obvious. A version of this device is marketed by the Humane Restraint Company in the United States of America (Fig.8). A simple wood and leather version of this device was used in the Netherlands somewhere around the World War II period (Fig.9). The belt goes around the waist, buckled in front if the hands are secured behind the back and behind if the hands are in front. Attached to the belt is a wooden stave, the bottom of which is strapped to one ankle.

The coming of the motor car brought about a number of inventions of restraint devices to be fitted in them for the safe transport of prisoners. An example is that of Robert Belliveau, which secures a previously handcuffed prisoner and can also accommodate leg-irons (Fig.10). The locking mechanisms do not need keys, but use levers that are out of reach of the prisoner.

A most unusual, complicated device is the "Catcher" marketed by the firm Monadnock in the U.S.A. in the 1970's (Fig.11). This appears to require at least two people to operate and seems to be a method of subduing a resisting or violent prisoner.

Occasionally horse hobbles turn up (Fig.12), perhaps offered for sale as “slave shackles” but they clearly are not as they can be opened easily. The locking device is only intended to be animal proof. An interesting device in the collection of York Castle is a shackle that seems to be one of a pair that were joined at the buckles with a strap (Fig.13). This is almost certainly some kind of animal hobble, probably to secure a goat for milking, the locking system is much too simple to prevent undoing by human fingers. Metal dog collars¹ (Fig.14) are also occasionally found and as these are sometimes linked in pairs and are usually lockable with padlocks, it is possible that they may be confused with restraints for people.²

- 1. Gertrude Hunt's *Dog Collars* illustrates the large collection of dog collars at Leeds Castle in Kent.
- 2. Curiously, in several editions of the Birmingham edition of Kelly's Trade Directory in the nineteenth century, handcuff manufacturers were listed under Dog Collar Makers. Hiatt certainly made dog collars, offering a wide range in its 1907 catalogue, for example, so there is almost a case for listing them as restraints!



Figure 1. Wherry's anti escape device patent drawing.



Figure 2. Wherry's device in use patent drawing.

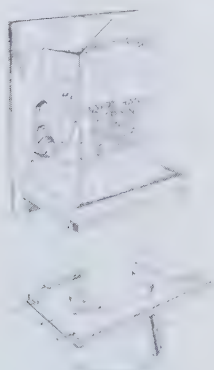


Figure 3. Long's fire alarm patent drawing.

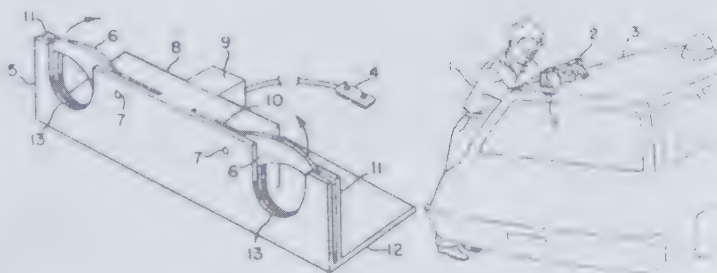


Figure 4. V.P. Thompson's remote control handcuffs patent drawings.



Figure 5. I-Chen's electronic handcuffs patent drawing.



Figure 6. Nagle's gyves patent drawing.

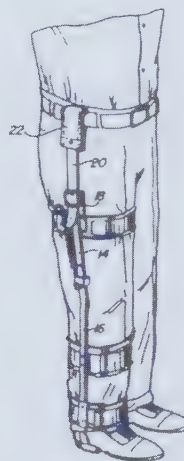
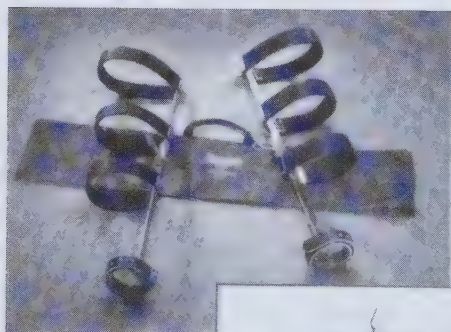


Figure 7. Bremer's gyves patent drawing.



Model #3 featured

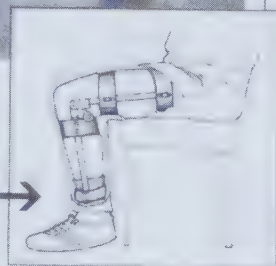


Figure 8. Humane Restraint Co. leg brace (Humane Restraint catalogue).



Figure 9. Replica Dutch hobble (posed picture).

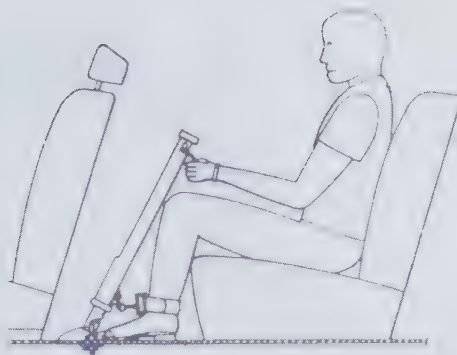
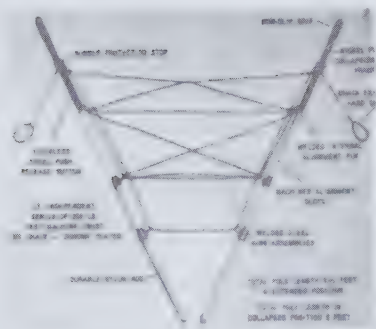


Figure 10. Belliveau's car restraint patent drawing.



Immobilizer. Capture Device

This Immobilizer. Capture Device is designed to restrain a person in a seated position. It is used to restrain a person who is unable to move or who is unable to move in a controlled manner. It is used to restrain a person who is unable to move or who is unable to move in a controlled manner.

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Figure 11. Monadnock "catcher" (Monadnock catalogue).

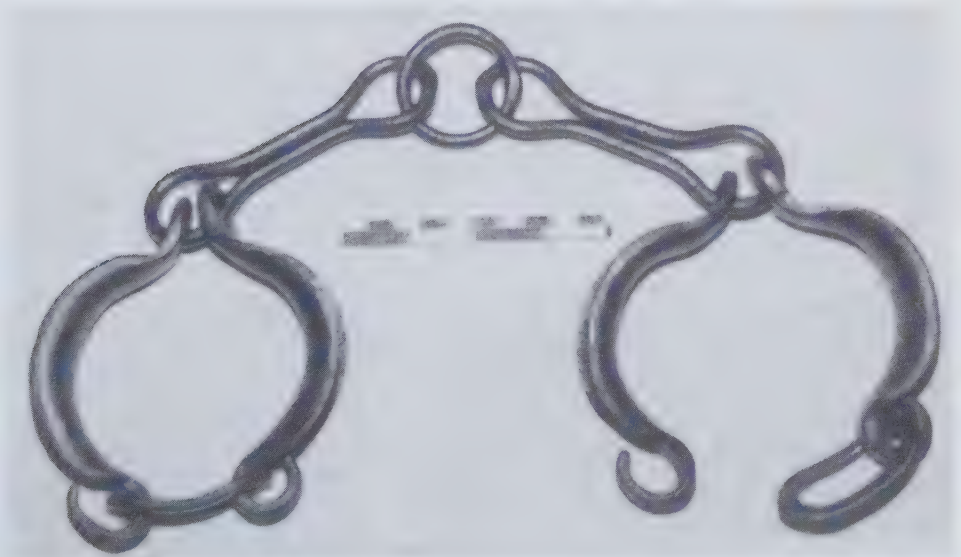


Figure 12. Horse hobble.



Figure 13. Animal hobble, opened by means of the pull button in the top centre of the picture (York Castle).

METAL BAND DOG COLLARS CONTINUED

No. 301

No.	300	301	304
Length	48	50	52
Width	2	2	2
Weight	65	72	80
Price	88	96	100
Material	Steel	Steel	Steel

No. 310

No.	306	309	310
Length	48	50	52
Width	2	2	2
Weight	65	72	80
Price	88	96	100
Material	Steel	Steel	Steel

No. 351

No. 276

No.	351	352	353	354	355	356
Length	48	50	52	54	56	58
Width	2	2	2	2	2	2
Weight	65	72	80	88	96	100
Price	88	96	100	108	116	120
Material	Steel	Steel	Steel	Steel	Steel	Steel

Figure 14. Page from Hiatt's 1907 catalogue.

This section is not about how to escape from restraints, the reader is referred to the many other books on that subject, such as those by J.C. Cannell, Dick Norman or Steranko. This section is about those restraints that have been made primarily to defeat escape artistes rather than for general use. Unsurprisingly, the items made to defeat Houdini are the best known, perhaps the most famous one being the Daily Mirror challenge handcuff.¹ Only one pair was made and that is now in the possession of David Copperfield the famous magician. However the interest is such that copies have been made, the firm of Stockade Locksmiths previously referred to in the section on Reproductions being one of the best known makers. The great Harry Houdini used some interesting handcuffs of the type specially made for escapologists some of which were later offered for sale. An example is the heavy “eights” pattern, the Houdini “spooft” handcuff (Fig. 1) which gives the impression of being escape proof, but which can be opened very easily when one knows its secret.

Ordinary handcuffs are treated, “gaffed” or “gimmicked” to make escape easy and these often turn up. Perhaps the best known type is the “Hamburg eight” handcuff (Fig.2). By filing an extra notch in the mechanism² these handcuffs are made easily removable by the performer, but when placed on a member of the audience they are secure. Darbies can be gimmicked by filing away part of the plunger.³ Then the spring loading works two ways and the handcuffs can be pulled open. “Jump” cuffs are done like this and so called because escapologists used them when performing escapes that required them to jump from bridges etc.

There is a patent by Foley of 1969 for a secret release handcuff (Fig.3) which would obviously be useful for escapologists, though that may not have been the inventor’s intention. Another reproduction of a restraint devised to defeat Houdini is the massive padlock shaped set of handcuffs said to be a copy of some Russian manacles (Fig. 4).

Another device one may come across that is designed specifically for escape artists is the extra long reach key. This is usually an ordinary handcuff key of the type used for modern Peerless models that has had its shank lengthened (Fig.5) (see also the next section on Keys). G.T. Distributors Inc. in the U.S.A. sells a “speed shim”, a neat device for the rapid removal of locked handcuffs, though this will not work on double locked ones (Fig.6).

1. See Reproductions section above.
2. See Dick Norman, *Handcuff Secrets for Magicians*.
3. Ibid.



Figure 1. Houdini spoof handcuff
(Chris Gower Collection).



Figure 2. Hamburg “Eight” handcuff.

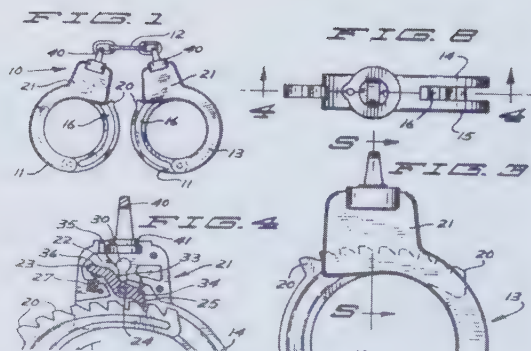


Figure 3. Foley's patent drawing.



Figure 4. Russian manacles (Chris Gower Coll.).



Figure 5. Extra long reach key.

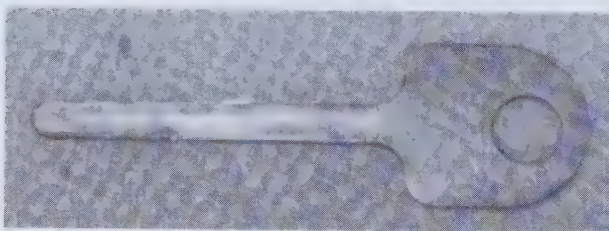


Figure 6. G.T.Distributors "Speed Shim" (approximate actual size).

(e) KEYS.

Because nowadays almost all handcuffs use a common key type several firms have produced what are called "universal" keys. These are usually somewhat larger versions of the standard key and sometimes these larger types are called "glove" keys as it is said that they are easier to use to unlock handcuffs when the operator is wearing gloves. Sometimes such a key is sold with the handcuffs, for example the Spanish company that makes Alcyon handcuffs do so with one of their models (Fig.1). Hiatt's also produce such a key (Fig.2). Hiatt-Thompson of the United States of America also sell a universal key¹, although it is marked to indicate that it is only for use with Hiatt products (Fig.3). Another firm in the United States of America, the American Handcuff Company, also produces large keys (Fig.1).

Some companies produce these large keys as a novelty advertising their products. For example, the Monadnock Company in the U.S.A. which specialises in side arm truncheons, sells a key that looks like a miniature truncheon (Fig.1). Some dealers have keys made up with their name on to advertise themselves, a well known example is the firm Gall's in the U.S.A. (Fig.3). This key is also an example of the flat design some of which are made so that they can be hidden usually in a belt slider (Fig.4). Another type of key is the "pen" type made to look like a pen complete with pocket clip (Fig.5). This is made by a company in the U.S.A., the Zak Tool Co. which specialises in keys and it offers a wide range of types including an ingenious one which fits over an ordinary key to make it longer and larger (Fig.6). Such a key would clearly be popular with escape artists. This firm also makes a key that can be hidden on an officer's belt as a fixed part of a keeper (Fig.7). Zak also make special commemorative keys such as the one recording the long association of the Harley-Davidson motorcycle manufacturer with the police (Fig.8). Two other interesting keys made by the company are also shown (Figs.9 & 10)

The LaTrobe Handcuff Company produced an ingenious little key designed to open all types of swinging bow handcuffs made in Britain at the time (Fig.3). It has three keyways, one for Hiatt "Snap-on" types, one for Hiatt "1960" pattern and one for LTH (also the later TKS) handcuffs. Also available is a standard key made up of plastic that cannot be detected by x-rays, presumably for use by secret service personnel. A clever little device for use in dark situations or at night is a key fitted with a miniature torchlight (Fig.11).

Another item, difficult to classify, seems appropriate in this section. It is a gadget² that is not a key which is sometimes seen fitted to Chubb "Escort" handcuffs. This gadget looks like an extension to the lock (Fig.12) and is a keyhole protector which is put into the handcuff keyhole locking with its own simple key. Its purpose is to prevent things such as pins or matchsticks being inserted into the lock to jam it.

Lastly, a group of nineteenth century keys as displayed at Lancaster Castle (Fig.13). The two larger ones are for plug locks and there are two basic types, three leaf and four leaf cross section as shown in the diagram (Fig.14). As a general rule older keys for darbies are more elaborate than the later ones and open handled ones like these are almost always pre-twentieth century.

1. Made for the firm by the Zak Tool Co.

2. This is not made by Chubb and the author has been unable to discover the maker's name.

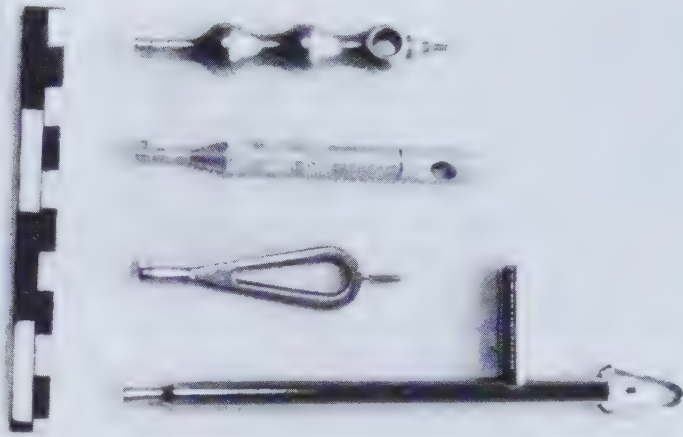


Figure 1. (From top) American Handcuff Co. "Twister" and "Big Easy", Alcyon and Monadnock keys



Figure 2. Hiatt large key.



Figure 3. (Clockwise) Hiatt-Thompson, Gall's and LaTrobe keys.



Figure 4. Zak Tool Co. belt slider key, ZT18.

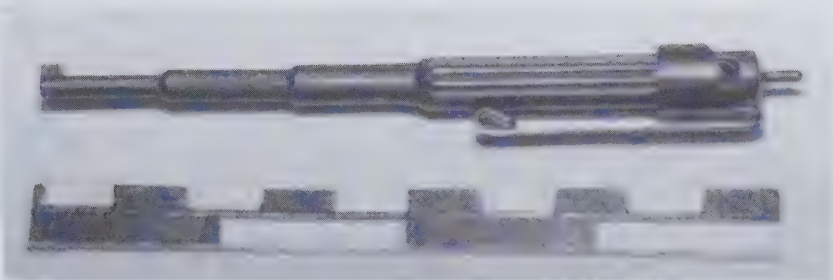


Figure 5. Zak Tool Co "pen" key, ZT21.

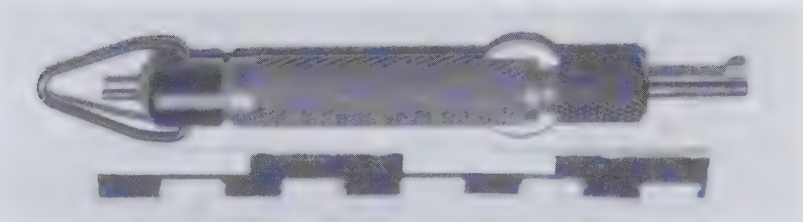


Figure 6. Zak Tool Co. key extension tool, ZT15.

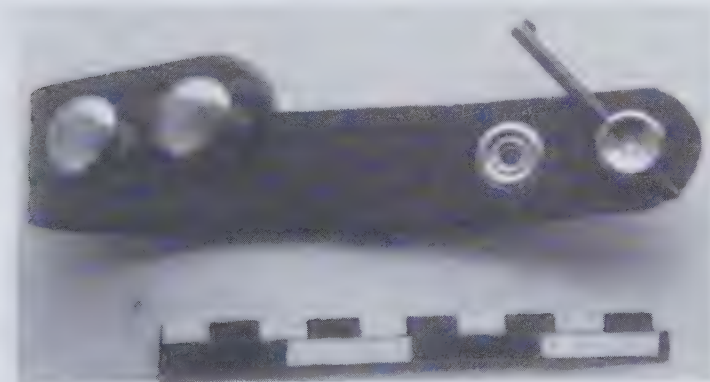


Figure 7. Zak Tool Co. belt slider key, ZT17

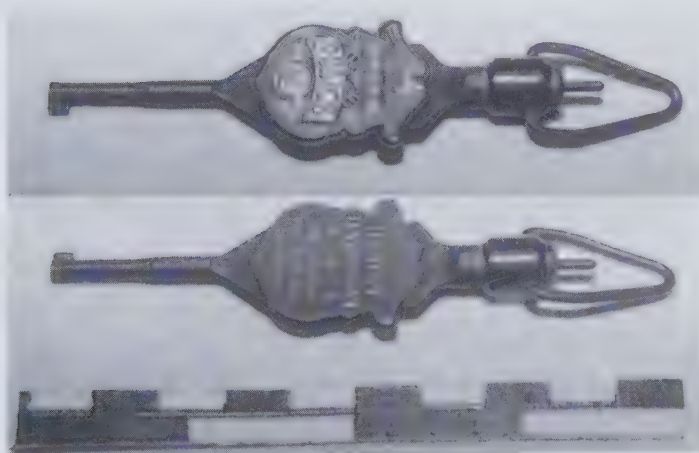


Figure 8. Zak Tool Co. Harley-Davidson key.

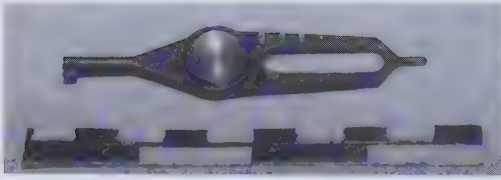


Figure 9. Zak Tool Co. key, ZT25.



Figure 10. Zak Tool Co. key, ZT7.



Figure 11 "Streamlight" torch key.



Figure 12. Keyhole protector in Chubb "Escort" handcuff (unknown press).



Figure 14. Diagram of plug lock key end cross sections.



Figure 13. Keys on display at Lancaster Castle.

(f) TRAINING AIDS.

Several aids have been devised for training personnel in the use of handcuffs. Ordinary handcuffs have been adapted by the addition of quick release buttons for the rapid removal of the handcuffs. The use of the key is quite time consuming and in training when handcuffs are applied and removed many times a significant amount of time can be saved by using quick release mechanisms.¹ Illustrated is a pair of Smith & Wesson model 100 handcuffs, with quick release buttons added by a firm in the United States of America, Pacific Transducer Corp. (or P.T.C.[Practical Training Cuffs]) (Fig.1). The handcuffs are very clearly marked FOR TRAINING PURPOSES ONLY, but they can be used securely if they are doubled locked which requires the key to undo. However, the firm also supplies another model with quick release buttons on the double lock mechanism too (Fig.2). This firm also adapts Smith & Wesson belly chain handcuffs and Peerless hinged handcuffs and leg-irons (Fig.3).

Handcuffs are made which are only usable for training purposes as they have no keys or keyways. Two French firms produce such handcuffs, Rivolier (Fig.4) and G.K. (Fig.5). These are versions of their standard models with quick release buttons occupying the position of the keyhole. Reevesline of the U.S.A. produced a handcuff which looks very much like a standard Peerless type, but the locking pawl is extended to make a quick release button (Fig.6). The author is not sure if this is a training device or is designed for stage or film use or as a toy.²

Special magnetic button keys are made. These are inserted into keyholes of any ordinary handcuffs and held in place by tiny magnets. A simple push or turn of the buttons opens the handcuffs rapidly. The model produced by the firm G.T. Distributors Inc. in the U.S.A. is very neat and works very efficiently (Fig.7). Hiatt-Thompson also produce a key of this type (Fig.8).

Plasticuffs are also made that do not lock and these are usually coloured red so as to distinguish as being for training purposes only. At one time the firm RIPP (see the chapter on Plastic & Webbing Restraints) offered a plasticuff which had a quick release button (Fig.9).

Another training aid is offered by the American Handcuff Co. in the form of a handcuff shackle that has one face made of clear plastic so that the working mechanism is clearly visible (Fig.10).

1. The author has frequently been astonished by the speed with which handcuffs are removed from prisoners in films and television plays, much faster than in real life situations.
2. Chris Gower has seen a version of this with the button filed down so as to be almost out of sight and only operable by something like a fingernail, clearly a variation suitable for use by escapologists.

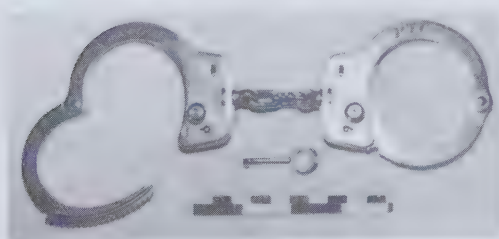


Figure 1. P.T.C. training handcuffs (single locking).

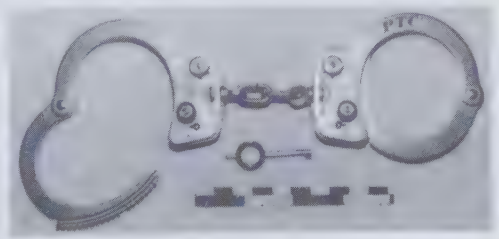


Figure 2. P.T.C. training handcuffs (double locking).
(Mike Riccard Collection).



Figure 3. Peerless hinged handcuffs and leg-irons (P.T.C. catalogue).



Figure 4. Rivolver training handcuffs.



Figure 5. G.K. training handcuffs.



Figure 6. Reevesline handcuffs.

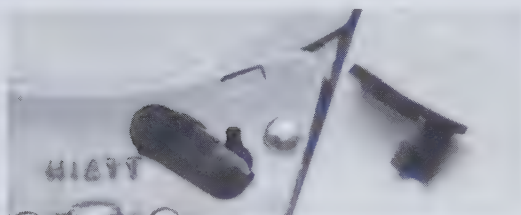


Figure 7. G.T.Distributors' magnetic key button.

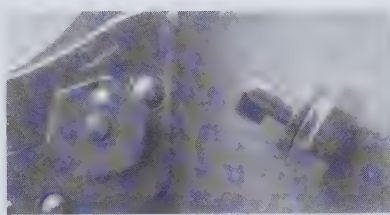
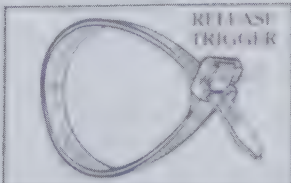


Figure 8. Hiatt-Thompson magnetic training key

TRAINING CUFFS



TC-100 - These heavy-duty, 1/2" wide plastic cuff simulators have a built-in trigger releasing mechanism that allows them to be reused over and over. Perfect for training with the GB-5 & GB-10 GANG BELTS.

Figure 9. RIPP training plasticuff (RIPP catalogue).

TRAINING CUFF CUTOUT

Model N51 - Training Cuff Cutout:
 Allows you to see all the inner workings of a handcuff. Drives home the importance of always double locking.



Figure 10. American Handcuff Co. training cutout (A.H.Co. catalogue).

11. THE PSYCHOLOGY OF RESTRAINT.

I am not sure that I have entitled this chapter properly because I do not wish to imply that it was written by a professional psychologist or psychiatrist. However, I am a qualified social worker with a wide experience of all sorts of people, having worked as a Probation Officer for more than a quarter of a century. It seems to me that it would be hard to find another job where one comes into contact with such a wide range of people. Much of my professional career was devoted to what may popularly be described as finding out “what makes people tick”. I feel therefore that I can legitimately express an informed opinion about the way in which restraints are used. However, I do stress that it is only my opinion.

Freedom and restraint are generally seen as opposites illustrated by contrasting ideas such as liberty and slavery or independence and bondage. However, it seems to me that things are not quite as simple as these “black and white” absolutes appear. The totally free person must be very lonely, for to enter into any relationship puts limits upon an individual’s freedom. It is not for nothing that we talk about family ties and the bonds of friendship or marriage. It is also true that some aspects of an individual’s situation are totally beyond personal control and cannot be freely chosen. We are not free to choose our parents and family, our size and shape, our intelligence, our sex or race, or to be other than human (though some seem to try!).

Our freedom is relative and it may be that in order to enjoy it fully there is a paradox in that sometimes we have to surrender part of it in order to gain a greater freedom. For example, if someone wants to play a game of cricket, that person cannot just go onto the field and do just whatever he or she wishes. To gain fully the free enjoyment of the game, its rules have to be obeyed. Similarly a member of an orchestra must surrender some freedom and obey the composer and conductor. It may even be that part of the satisfaction that comes from such interactions is precisely that surrender to the discipline of the activity.

So it seems that our liberty is conditional if we are to gain any benefit from it and unless we want to be totally isolated we must compromise with others. Our true freedom must come with the choices we can make about those compromises and the way in which we respect the freedom of those we interact with. It seems to me that in some ways it is best to describe liberty as the right of the individual to choose freely her or his own bonds. But let us now consider physical bonds, restraints such as manacles and fetters.

During 1997/8 there was a series of documentary programmes on British television about the work of police and sheriffs’ departments in the United States of America which was called *Highway Patrol*. This purported to have been filmed by cameramen travelling with the patrols and catching events as they happened. Arrests of suspects were a regular feature and I was much intrigued by the mechanics of these arrests. Frequently the films showed patrols stopping cars, ordering the occupants to get out and wait by the roadside while the car was searched. When incriminating material was found, the suspect was arrested and then almost always handcuffed. The situations were clearly not ones where it was thought the suspect would escape, there had been ample opportunity to run before the arrest and rarely was resistance or even violence a consideration. It seemed that other factors prevented the suspect from escaping, from not wanting to abandon one’s belongings at least, to the fear of being shot perhaps at worst. The handcuffing was not about escape but must have had some other purpose.

There is a training film which starts with the narrator stating “handcuffing is a symbolic act”. *Highway Patrol* seemed to illustrate that very well. Suspects were handcuffed on arrest, as if to symbolise the act. They then knew that they were prisoners and anyone who saw them would recognise them as such. Often one sees on television newscasts, particularly from the

U.S.A. prisoners being shown in public in a variety of restraints in situations where the risk of escape is minimal, yet they are wearing such things as transport vests, belly chains, security boxes and leg-irons. It is as if it was being demonstrated to the onlookers that these are dangerous criminals and therefore to be regarded as something extraordinary. The prisoners recently transported by the U.S. Army from Afghanistan to imprisonment in Cuba were restrained in handcuffs, belly chains and leg-irons which greatly reinforced the idea of their perceived dangerousness. However, that was a situation where the escape risk of fanatical men was probably real. Sometimes a prisoner will be equipped with body armour (Fig.1) as if the sight of such a dangerous individual would invite attack. Indeed handcuffed prisoners have been so attacked, even killed, most famously for example Lee Harvey Oswald the alleged assassin of President J.F. Kennedy.

The last decade or so of the twentieth century has also seen in the U.S.A. the revival of the chain gang, where prisoners are routinely paraded in public in leg-irons and chains (Fig.2). Here the motivation is openly stated to be humiliation, labelling with restraints so that all can see the criminals. Such was the rationale behind the medieval pillory too. These restraints were not used solely as a means of preventing prisoners from escaping but were also a way of demonstrating that the persons restrained were to be condemned or at least despised. They had to be made helpless to show the superior power of society over those considered to be its deviants.

It seems to me that those whose job it is to maintain order in our society routinely use restraints to symbolise their power as much as for any other purpose. From this it may be surmised that a major aspect of the use of restraints is about power relationships. These relationships are varied. At one extreme is slavery and it is universally accepted that chains are symbolic of slavery. The policeman handcuffing a prisoner on arrest is probably the simplest and most obvious form of expressing power. Sometimes a restraint is used symbolically to indicate a bonding or union, for example the toy ball and chain or handcuffs often given to marrying couples. However, it seems to me that it is not just as simple as that. Art, literature, cinema and television abound with images of prisoners and capture, so that one must suspect that the ideas connected with such imagery reflect an important aspect of the human psyche. The power relationship is bound up with ideas of domination and submission and here we enter into a very complicated realm.

The human brain is a very complex organ and we do not yet fully understand how it works. It may be that the somewhat over-simplified view of its workings that follows may be helpful. It seems to me that we are equipped with two basic ways of thinking. Firstly there is reason, popularly perceived as "using one's brain" and perhaps this can be seen as logical or scientific thought. Then there is emotion, "thinking with the heart" maybe, or what is often called "gut feeling". These two ways of thinking are often in conflict, diametrically opposed to one another and this is demonstrably true in the case of crime and punishment. Think of the many passionate debates over the merits of capital and corporal punishment. The idea of doing nasty things to people is very common, particularly if it can be justified on the grounds that the recipient of such treatment deserves it. Reason may tell us that killing people is wrong, but our emotions like the idea of revenge and painful retribution. Reason may tell us that it is not necessary to put people in restraints on every possible occasion, but our emotions like the idea of the subdued and helpless prisoner, particularly if we can feel justified because of the danger the prisoner supposedly or actually poses.

It may be that this conflict is not a problem if we deal with it by play or fantasy, but more of that later. However, if we are not aware of the conflict then serious consequences may follow. A case of miscarriage of justice is said to have occurred in England when a young man was

wrongfully convicted of murder and hanged. It is said that the clerk of the judge involved told the story that he usually packed a spare pair of trousers for his employer because he always had an orgasm when sentencing young men to death or flogging. The judge's summing up at the trial was described as very one-sided, more like a prosecution statement than an objective oversight of the evidence and law. It can be said therefore that the judge was unaware of his conflict of thinking and so allowed himself to be overly influenced by his emotion. The alternative view that he was aware would be tantamount to accusing him of murder.¹

The example quoted in the last paragraph leads us to consider the aspect of the power situation, the domination/submission factor and its sexual connotations. It seems to me that there is a clear link between the use of restraints as hitherto described and the kind of thing that is usually described as "kinky". People have used restraints in a sexual context for a very long time indeed and many people have heard of "bondage" and "S & M". At the very least, most people are aware of the "stag night" pranks referred to in an earlier chapter. I find it very difficult to establish a point along the continuum, defined as being from the use of restraints by law enforcement officials at one end, to their use in a sexual context at the other, where one can say that the nature of the power relationship can be demonstrated to be **fundamentally** different on each side. It may be that if people need to they have to define such a point for themselves. There is a large "grey area" in between the ends of the spectrum as so defined which contains ideas like Houdini and escapology, knotting and rope work, the collection of restraints and game playing such as escape and evasion exercises, sometimes serious for military training and sometimes just as a leisure activity. The interest in restraints is widespread and common, one has only to see the numerous films and television programmes that contain arrest, capture, imprisonment and escape themes to bear witness to the fantasies that are almost universal in some form or other. Popular too are museums which contain a large restraint element, the London Dungeon for example gets over a million visitors a year.

That the ideas of domination and submission and the associated images of bound or chained prisoners are so popular as to be almost universal can be demonstrated in a variety of contexts. In religion, for example, one has to ask why the images of mutilation and martyrdom are so popular. Think of the numerous representations in art and sculpture of St. Sebastian bound to a tree (Fig.3). The front of Coventry Cathedral is adorned with a large sculpture which includes a chain bound Satan. A famous book from earlier times is Fox's *Book of Martyrs*, well illustrated of course. These images are not to be found only in religious contexts. For example there is a life size statue of a naked Viking youth bound to a pillar standing in a prominent position outside the pleasure gardens on Skansen Island, Stockholm, Sweden (Fig.5). As a subject the flogging of Marsyas is popular with artists and sculptors, where the victim can be portrayed bound awaiting his fate (Fig.4). Also popular are the myths of Andromeda and Prometheus, there are many portrayals of them chained to rocks (Figs.3 & 6). Advertising too makes use of such images. A newspaper advertisement about items made from reclaimed materials shows one of the items to be a belt made from old tyre inner tubes and decorated with beer bottle tops and safety belt buckles. These belts were shown tightly binding a scantily clad man, his hands secure in front (Fig.7). In Hojojitsu, the Japanese **art** of rope tying, one of the rules is that the ties must be pleasing to the eye, which reinforces the idea of the aesthetic appeal of restraints. Going a stage further, there are restraints which themselves can be seen as works of art, the highly decorated Victorian darbies shown at the beginning of the Modern chapter and the Philippine handcuffs shown later in that chapter, for example.

Art as just described seems different to that referred to in an earlier chapter, the Assyrian bas-reliefs and Roman columns, where the pictorial representations of restraints are a public record of real events that involved the capture of prisoners. These modern artistic

representations are different and seem to be expressing an interest rather than recording an event, even if the pretext of an historical or mythological event is used.

It has interested me to note over the years that whenever I mention to anyone that I am interested in handcuffs etc. and that I collect such items there is sometimes a response which indicates that the recipient of the information regards that interest as somehow "sexy" or "kinky". That kind of comment reveals that the person making it has probably had some erotic fantasies about restraints and seems to me to be further evidence of the general interest in them. Another situation I have found is that people who collect such things are often quite secretive about it, as if they have guilty feelings about such an interest. It is my view that both of these attitudes betray a lack of understanding and in some situations such a lack can be dangerous. It seems to me that people are almost universally interested in restraints in some way or other, but if they do not understand clearly the mechanisms of their interest and are in positions of power it is possible that they will at least make an error of judgement. The judge referred to earlier is one example, another is the notorious case in 1996 in England of a young man dying of cancer who was moved from prison in handcuffs and chained to his bed in the hospice where he was taken just a few hours before his death.²

It is then fairly easy to see the motivations that cause people to be interested in applying restraints to others. What is less obvious is what makes so many people actually enjoy being in restraints. I have noticed over the years that people who know about my collection of restraint equipment very frequently want to see it and then most want to try out some items. Handcuffs are always popular and I remember on one occasion giving a talk about restraints to a Women's Institute meeting and almost all the ladies present wanted to try on a pair. When giving talks I have never found it difficult to find members of the audience willing to be put into restraints to demonstrate their use. What is even more interesting is the reaction of those people who have wanted to try out quite intense restraints when they have come to see my collection at home. Particularly interesting has been the reaction of those who wanted to try out a straitjacket. Surprisingly the usual reaction has been that the experience was relaxing. The feeling of total helplessness in a canvas and leather cocoon seemed to be a soothing state, some have even said they could happily go to sleep in that situation.

Over the years several of my friends have shared my interest in restraints in the escapology and magic act we did for many years and latterly some have helped by being prisoners when I give talks and demonstrations. All have obviously enjoyed being in restraints, some for the challenge of escaping and others for interest in the technicalities involved. One has described how he feels comfortable when securely bound and that the feeling of being in restraint is in a paradoxical way liberating, his responsibility for decisive action has been removed so he can relax. I suspect that this is only true in play situations like those demonstrations where there is no social stigma or real power dominance involved and the captor is not going to use uncomfortable force. It is a consent situation so the primary factors are purely sensual. However, in another context, when I was working in a Juvenile Detention Centre, I found that it was not uncommon for lads to tell me that they got into trouble because they liked the excitement of being chased by the police, even to the point of enjoying being caught and that was enhanced if they were handcuffed! It is interesting to note that in those places where prisoners are routinely restrained in transport chains, bound hand and foot, there is seldom any complaint. It may be that they like the "macho" image of the powerful and dangerous man such treatment presents! So it would seem that the feelings involved are quite complicated.

I have heard the opinion expressed that being securely bound, such as in a straitjacket, produces in a prisoner feelings akin to those felt by an unborn foetus, a "back to the womb" experience that is somehow comforting. It may be that there is a similar relationship between

the sensation felt when being hugged or cuddled and those when being bound in a consenting situation. There does not seem to be any fundamental difference in those sensations studied purely as physical experiences. The main difference is probably in the intensity of the physical sensations. So perhaps it is not so difficult to understand why it is that sometimes people find the experience of being put into restraint to be pleasurable. When that sensual experience is added to the pleasure many people get from acting or role playing, then it is possible to understand the reasons why so many people use restraints in leisure activities.

When I have been giving demonstrations, I have found within myself a complex set of emotions accompanying my thoughts. When my assistant is securely restrained in a full transport kit for example, I find myself feeling very protective and even somewhat possessive. I am on edge and carefully watching to ensure he comes to no harm from any bystander. He has spoken of his feelings of a kind of security so that there is a somewhat irrational warmth in that captor/captive situation. I have heard that similar feelings have been expressed by people in real life situations of captivity or abduction. A strange bond seems to develop between the two parties, only one is in physical bonds but both are in the emotional bond. This theme is sufficiently well known as to provide material for several films. For example, in the film *48 Hours*, the characters played by Nick Nolte and Eddie Murphy as policeman and prisoner have a strangely ambivalent emotional relationship.

Perhaps one of the most extreme examples of these complex feelings is that between an executioner and his victim. In his memoirs Albert Pierrepoint¹ writes with a curious tenderness about the people he has hanged. Always he seems concerned that his victims should go to their death in as dignified a manner as possible with the absolute minimum of pain. In a television documentary I saw called *Fourteen Days* about the last days of a young man going to the gas chamber in the U.S.A. it seemed to me that in the scenes where the condemned man and the person responsible for overseeing his execution were together there was a tenderness that seemed quite surreal. Significantly, both executioners subsequently expressed their opposition to capital punishment, maybe the emotional strain of losing the prisoners they symbolically possessed was too much.⁴

These complex emotions that are felt by both captor and captive can be very enjoyable, which may well be why so many people like to be in situations where they can be felt. It is therefore vitally important to understand those feelings. Playing games in order to experience them seems to me to be an acceptable course of action. What is not acceptable is to bring about real life situations whose **primary** reason for being created is to experience those feelings. It seems to me that in real life situations there ought to be **other primary reasons** and these emotions very much an incidental side issue. It doesn't seem to me to be wrong for a policeman or prison officer to enjoy handcuffing prisoners, but it would be wrong if it was done **simply and solely for that pleasure** and not primarily to prevent the prisoner escaping.

Something I have found difficult to understand is that many policemen and prison officers appear to be quite uninformed about restraint equipment. These are the people for whom such equipment provides tools of the trade and one would think they would be the first source of knowledge in such matters. I met an American policeman who had never heard of a security box, for example. I noticed in the television documentary *Highway Patrol* whenever a prisoner was handcuffed, the handcuffs were rarely double locked. This was even more remarkable because the prisoners were always handcuffed behind the back, then seated in cars. The handcuffs then came between the backs of the prisoner and the seat increasing the risk of over tightening and subsequent injury. Going a stage further, there is evidence in medical literature of intentional misuse, of handcuffs being deliberately over tightened when applied as if the officers involved were using the handcuffs as weapons to inflict punishment.⁵

I remember doing a show when two prison officers were invited to apply a pair of handcuffs to my colleague who was going to do a “mail-bag escape”. The handcuffs were forced on so tightly he couldn’t use his hands and we had to undo them and reapply them correctly!

In Britain I have heard of policemen who do not know about double locking. Policemen have even said they thought the double locking hole in the lock case was for oiling the handcuffs. When shown how to double lock his own handcuffs one policeman remarked that he had wondered for some time what the little peg on the key was for! British prison officers use Chubb “Escort” handcuffs and are frequently careless about operating the locks. The key is made of slightly softer metal than the keyhole plate so that after much use it wears and if one is not careful it is possible to put the key in the wrong way round. Often when this happens the officer persists in trying to push the key in until eventually it jams solidly and the expensive handcuff is rendered useless and has to be destroyed. I was not surprised when one handcuff manufacturer told me that when designing handcuffs one has to bear in mind whether or not they are “police proof” in the sense of “idiot proof”!

I have also been surprised by several policemen, including a superintendent, who have seen my collection and then expressed astonishment at the range of restraints available. I can understand them not knowing about ancient or medieval stuff, but they knew nothing of the wide range of modern items. This curious ignorance on the part of those whom one might have expected to be knowledgeable is strange and I wonder how much of it is related to those factors discussed above. The ignorance seems to me to be sometimes related to the guilt feelings some of the more secretive collectors show. It seems to go to the highest levels and I was surprised to note the almost complete lack of any reference to handcuffs in official training manuals. What is more alarming is that there is considerable evidence of misuse that is not due to ignorance, but which has decidedly sadistic undertones, particularly in cases reported in the U.S.A.⁶

Returning to the ideas of freedom and restraint I discussed at the beginning of this chapter, it seems to me that the complex ideas that are connected to the use of restraints can produce some paradoxical thoughts. For example, if an individual **freely chooses** to surrender to a trusted person in some kind of game and allows him/herself to be handcuffed and if that then brings some sense of enjoyment, that individual can be perceived to be both **captive and free!** My friends who assisted me by acting as prisoners for illustrations in this book were free men at all times. They chose to help me and enjoyed the experience, gaining knowledge and understanding which increased their freedom of expression.

The use of restraints is clearly a far from simple matter to assess. A complicated set of emotions may be added to a range of rational reasons in the enormous variety of situations in which they are used. It seems to me that people who use restraints, no matter in what context, should do so with a clear understanding of what is going on in their minds so that they are fully aware of their motivation. If that is done, then in law enforcement there would be no excessive force or inappropriate use. Equally it would ensure that those who play with restraint equipment as a leisure activity would do so **only in consent situations** and get increased pleasure in that activity from a better understanding of the nature of their interest.

1. Article in the Guardian newspaper, *Error that sealed fate of accused*, by “Austin”, 31.7.98.

2. Anon. *The Shackling of Prisoners*.

3. Albert Pierrepoint, *Pierrepoint, Executioner*.

4. Incidentally, I too am opposed to capital (and corporal) punishment.

5. See the medical articles listed in the Bibliography.

6. Ibid.



Figure 1. Handcuffed prisoner in body armour (Guardian),



Figure 2. Prisoners in a chain gang, Alabama, U.S.A. (Guardian).



Figure 3. Paintings by Rubens, St. Sebastian and Andromeda.

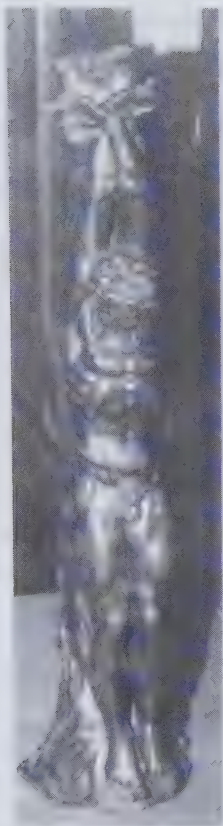


Figure 4. Bronze statuette of Marsyas by an unknown Italian sculptor.



Figure 5. Marble statue of a bound Viking by John Borjesson (Björn Ekenbrant photograph).



Figure 6. Bronze statuette, Mercury binding Prometheus by Giovanni Battista Foggiani.



Figure 7. Advertisement for fashion items. (Guardian)

12. HANDCUFFING TECHNIQUES.

I have had many opportunities to observe law enforcement officers using restraints and have been much concerned to notice how often the techniques used have been inadequate. The following thoughts about technique may be helpful and may seem to the reader to be common sense. They are based on ideas of security and the minimisation of risk of injury to both prisoner and guard.

First of all, when I apply handcuffs, I think they should fit snugly around the wrist, but without pressing into the flesh. It should be possible for me to put a little finger between the shackle and the prisoner's wrist. The handcuffs should be around the wrist at its most flexible point, that is below the lower protruberances of the radius and ulna. If the handcuffs are on the prisoner's wrists in front of the body, they should be placed so that the double locking hole of each shackle is at the top. In that way the double lock can be operated with the least risk of me being caught off balance should the prisoner decide to be difficult. The keyholes should be to the front, that way I can unlock the handcuffs, again with the least risk of being caught off balance. I would never leave a prisoner unwatched when handcuffed, so the risk of the lock being picked should be slight. If I thought a prisoner to be very likely to be able to pick handcuff locks, I would use high security types or fit a security cover. When I apply handcuffs to the rear, I put them on so that the double locking holes face outward and keyholes face upwards.

It is common in Britain for a prisoner to be handcuffed to an escort, though I would hesitate to do this with a difficult prisoner. It is alarming to see often this is done wrongly. It is important that the escort has the handcuff on the weak wrist, that is in most cases the left one and the prisoner is restrained by the strong wrist, which is usually the right one. This arrangement should still apply if the prisoner is also fitted with another pair of handcuffs on both wrists. This makes it less easy for the prisoner to cause difficulty for the guard.

When I use a belly chain I fit it snugly around the prisoners waist NOT around the hips. It should be put on tightly enough so that it cannot be pushed down over the hips. The same applies to the use of transport belts. If the prisoner's physique were such that the waist dimension is greater than the hips, as may happen with fat or very slim persons, I would use a transport vest.

If I put a prisoner in leg-irons, I have the prisoner kneel, which is the safest way to apply them. The irons can then be applied from behind. Because the Achilles tendon of a kneeling person is relaxed, care must be taken not to apply the leg-irons too tightly. When a kneeling person stands, the tendon tightens and will be very painful with tight leg-irons. I like to be able to get two fingers between the shackle and the prisoner's leg. If the prisoner remains standing, I apply the irons from the side NOT in front or behind. I take care to have the double locking holes to the front and the keyholes facing upwards. This makes removal easier. I usually fit the leg-irons with a connector chain which keeps the leg-iron chain from dragging along the ground. Much use without a connector will cause wear to the plating of the chain and the subsequent rusting may weaken it. It will also prevent the prisoner from tripping over any unevenness of the ground.

The problem with the foregoing instructions is that they all assume that the prisoner is cooperative. Indeed, it may be said that any prospective prisoner with any sense will be so in order to avoid discomfort. However, in real life prospective prisoners are quite often anything but sensible and can be in highly agitated states, often exacerbated by drugs and/

or alcohol. In those cases it seems to me that the restraints must be applied as best one can, trying to keep to the above guidelines. If possible the special restraints designed for such situations should be used¹. Certainly the restraints must be extra carefully monitored after application and adjusted appropriately as soon as possible. If as a last resort it has been felt necessary to “hog-tie” a prisoner, special observational care is needed as this position is very dangerous after vigorous exercise and even more so if drugs or alcohol are involved².

It is probably obvious that in a law enforcement situation where it is decided that a dangerous prisoner should be put into full transport restraints at least two and preferably three officers should be present to apply them. **AT NO TIME SHOULD A PRISONER IN RESTRAINTS BE LEFT UNATTENDED.** This rule should apply in leisure/play situations as well as in real life ones.

1. See the descriptions of the Bodyguard, VIPERS, Hugger and Wrap restraints in earlier chapters, for examples.
2. See the medical literature listed in the Bibliography.

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INTERNET.

The Alex. R. Nichols Collection: <http://www.Alexhandcuffs.tellinco.co.uk>

The Galleries of Justice: <http://www.galleriesofjustice.org.com>

Silverman, J: *Yossie's Handcuff Collection*. <http://www.blacksteel.com>

(A good source of information about many aspects of restraint equipment, with illustrations and descriptions of items in the collection. Links to a lot of other collectors.)

ADDENDA.

1. York Castle has a lightweight version of the "plug 8" handcuff which is most unusual. The double shackle is made of steel whose cross section is rectangular instead of the usual irregular round, somewhat oval shape (Fig. 1a & 1b). The maker's name is unknown, but the author is of the opinion that it is British and that it is a relatively late version of this handcuff, possibly as late as the 1920's.

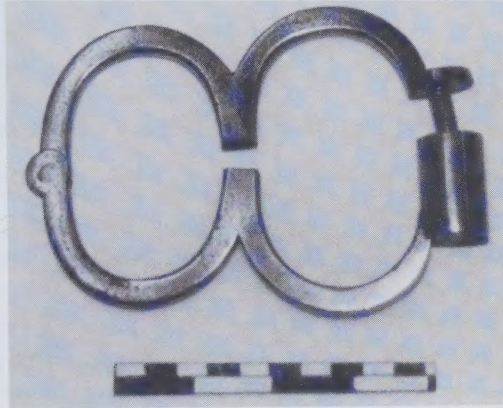


Figure 1a. York Castle "plug-8" handcuff.



Figure 1b. Top view of York Castle handcuff.

2. One frequently sees in films handcuffs which have a longer chain linkage than usual, about six inches or so. Nowadays none of the major companies appear to offer these in their standard catalogues, though some, Smith & Wesson for example, offer a customising service, making up handcuffs and combinations to customers' requirements. However, it was not always so and previous entries for French and German firms show that they used to offer this type of handcuff as routine. Two fairly recent press photographs are interesting in that they show law enforcement agencies using handcuffs with quite long chain linkages (Figs.2 & 3).

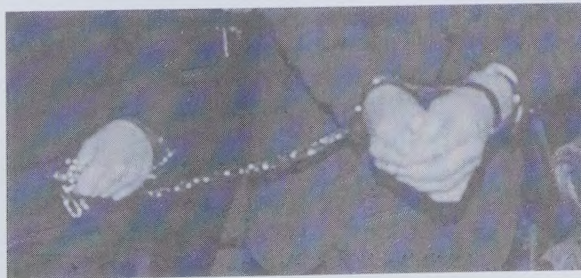


Figure 2. Republic of Ireland prison officer with prisoner. The prisoner is handcuffed with a pair of "Speedcuff" or "Quik-kuff" handcuffs and tethered to the officer with the long chain handcuffs (Guardian).



Figure 3. Palestinian prisoner held by Israeli police (Guardian).

This type of handcuff usage by law enforcement agencies is very uncommon. It seems that the bulk of the long chain handcuffs, particularly the extra long chain variety, have been produced for the leisure and S/M market. For example, Hiatt's produced some long chain handcuffs for the London firm "Fetters" sometime around 1980. Ordinary darbies (Fig.4) and "Scotland Yard" pattern handcuffs of the post 1970 non-ferrous metal type (but with steel chain linkage) in both polished and nickel plated finish can be found.



Figure 4. Hiatt long chain linkage darbies (polished finish).



Alex Nichols was born in Bristol on 21st December 1929. He was educated in schools in Bristol and left Cotham Grammar School in December 1945 having gained a School Certificate with three passes, five credits and a very good. His first employment was in the Bacteriology Department of Bristol University. He did his National Service in the Royal Army Medical Corps in 1948/9. In 1956 he gained the Fellowship of the Institute of Medical Laboratory Technology. In 1965 he underwent training as a Probation Officer gaining a Home Office Certificate. He then worked for the Somerset, Bristol (later Avon) and Gloucestershire Probation Services, which included nearly six years working in various penal institutions in Avon.

He married Sheila Darby in September 1955 and they have a daughter and two sons. They also have two granddaughters and a grandson. Since July 1980 they have lived in a 400 years old cottage in the little Cotswold hamlet of Kingscourt, the garden of which overlooks the site of the famous Roman villa at Woodchester. After his retirement in June 1991, Alex took a part time degree course in History with Cultural Studies at what is now the University of Gloucestershire and graduated in 1996. Since then he has been mainly engaged in research for this book, when work on extensions to the house and garden landscaping under Sheila's supervision permitted!

Besides his interest in handcuffs etc., Alex also enjoys music, especially opera and has an extensive collection of records, including many old shellac records of famous singers. He is interested in visiting castles, having many books on that subject and also on another passion, battleships. He also enjoys Natural History, particularly Entomology. When he was younger, he was for many years active in the Scout Movement in Bristol.

His interest in handcuffs began in the late teens when he was shown a pair of Hiatt 125 "flexible" handcuffs belonging to the policeman father of one of his friends. He then read *The Secrets of Houdini* by J.C. Cannell and later formed an amateur group with three friends which performed magic and escapology in the Bristol area for about thirty years. After moving to Kingscourt, he stopped performing and continued the interest by collecting restraints. His collection is one of the largest in Britain and is mostly housed in the Museum of Law at the Galleries of Justice in Nottingham. A small part is also on display at Tetbury Police Museum, Gloucestershire.



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